GENERAL INFORMATION ABOUT WATER
Water (H₂O) is a chemical compound of the elements oxygen (O) and hydrogen (H). As a liquid, water is transparent and mostly without color, smell or taste. Water is the only chemical compound on earth that appears in nature as a liquid, solid and gas. The term water is used for the liquid aggregate state. In its solid state, it is referred to as ice and in a gaseous state as steam. Water is the basis of life on earth.

Etymology

The word “water” is derived from the Old English word “wæterian” and the Old High German “wazzar” – wet, flowing. The Indo-Germanic terms *wódr and *wédōr are already found in Hittite texts from the 2nd millennium B.C. Related words can also be found in other Indo-Germanic languages, e.g.

Germanic: German Wasser; English water; Isl. vatn Celtic: Scott. uisge (cf. whiskey); Ir. usice Slavic: Russian woda (woda, cf. vodka); Polish woda; Upper Sorbian woda Baltic: lit. vanduo; Latvian ūdens The old Greek word ὕδωρ, hydor, “water”, which all foreign words with the components hydr(o) can be derived from, also belongs to this family. Water consists of molecules that are each formed of two hydrogen atoms and one oxygen atom.

On the Pauling scale, oxygen has a higher electronegativity with 3.5 than hydrogen with 2.1. For that reason, the water molecule has distinctive partial charges, with a negative polarity on the side of the oxygen and a positive one on the side of the two hydrogen atoms. This results in a dipole whose dipole moment is 1.84 debye in its gaseous phase. If the water appears as a ligand in a complex compound, water is a monodentate ligand. The geometric shape of the water molecule is angled, where the two hydrogen atoms and the two electron pairs are directed into the corners of an imaginary tetrahedron. The angle formed by the two O-H bonds is 104.45°. Due to the increased space requirements by the free electron pairs, it deviates from the ideal tetrahedral angle (~109.47°). The length of each of the O-H bonds is 95.84 pm. Since water molecules are dipoles, they have pronounced intermolecular forces and can bond into clusters by forming hydrogen bridges. These are not consistent or firm chains. The bond from hydrogen bridges exists for only fractions of seconds, after which the individual molecules break loose from the bond and connect with other water molecules again in a time period that is just as short. This process repeats constantly and in the end results in the formation of variable clusters. The special properties of water are a consequence of these processes:

Water has

- a density of about 1000 kg/m³ (originally the definition of a kilogram), or more precisely: 999.975 kg/m³ at 3.98 °C. A density anomaly here refers to a characteristic based on the formation of hydrogen bridges, namely that water has the highest density at this temperature and that at this temperature it continuously – and while freezing even rapidly – gains volume as it cools. This means it loses density, so that ice swims on water
- the highest heat capacity of all liquids (75.366 J·mol⁻¹·K⁻¹ corresponding to 4.18 kJ·kg⁻¹·K⁻¹ at 20 °C) (so that oceans are great heat reservoirs)
- the highest surface tension of all liquids (except mercury); in water in moist air, it amounts to 72 mN/m at +20 °C, which facilitates the formation of drops
- the largest specific evaporation enthalpy of all liquids (44.2 kJ/mol corresponding to 2453 kJ/kg at 20 °C; this is the cause of the cooling effect in transportation) along with the high melting enthalpy (6.01 kJ/mol corresponding to 333 kJ/kg; so that salt water shows just a slightly lower freezing point reduction compared to pure water)
- very low heat conductivity (0.6 W/(m·K)) at 20 °C.

Depending on the isotope composition of the water molecule, there is a distinction between normal “light water” (two hydrogen atoms: H₂O), “heavy water” (two deuterium atoms: D₂O) and “superheavy water” (two tritium atoms: T₂O).

Under high voltage, water can flow between two vessels in a suspended state.

\[
\begin{align*}
\text{H}_2\text{O} & \quad \text{H}_2\text{O} \\
\delta^- & \quad \delta^+ \\
\text{H} & \quad \text{H} \\
\text{O} & \quad \text{O} \\
\end{align*}
\]

104.45°

95.84 pm

\[
\begin{align*}
\delta^- & \quad \delta^+ \\
\text{H} & \quad \text{H} \\
\text{O} & \quad \text{O} \\
\end{align*}
\]

\[104,45°\]

\[95,84\text{pm}\]
Human health

More than 70% of the human body consists of water. A lack of water therefore leads to serious health problems (e.g., dehydration, kidney problems). If there is not enough (of a water supply), this can result in dizziness, circulatory disorders, vomiting and muscle cramps, since the oxygen and nutrient supply to the muscles is limited if there is a lack of water. The minimum amount needed per day varies, but a person can drink 1.5 liters or more per day as a healthy adult is not scientifically supported. With an average daily consumption of 2 liters, more than 55,000 liters are drunk in 80 years. The need for water might be higher at increased temperatures. Drinking excessive amounts of water – 20 or more liters – per day can also result in health damage. It may lead to “water poisoning” or, more precisely, a lack of salts, i.e. hyponatremia with permanent neurological damage or death. Water is used in medicine (in the form of isotonic solutions) especially for infusions and injections. Aerosolized water is used as a treatment for various transformation steps in a cyclical element teachings (next to wood, fire, earth and water) have a very beneficial influence on health and hygiene. Also see: Bathing, balneology, Kneipp cures, sauna, swimming, washing. The ancient Romans supported a “water culture” in thermal baths for those reasons.

Theories on surviving without food

At normal ambient temperatures, healthy people will die of thirst after about three days without water. However, this time period greatly depends on the temperature. Different statements can be found in literature on the water requirement for human survival. There is a lack of an exact clarification of whether this involves exclusively the omission of energy or the absence of mineral or mineral minerals are unavailable too. In a starvation diet, for example, all that is missing from the nutrition are the chemical energy sources. Healthy people can survive without food for a period from 30 to 200 days if enough water is available.

History of water use

The history of human water use and therefore that of hydrology, the water supply and especially hydraulic engineering is characterized by a comparatively small amount of basic motives. From the initial settlers to the cultures of Antiquity, the Middle Ages and modern times, a conflict between too much and not enough water has always been a central issue. People have been at its mercy nearly throughout history, whether it was a drought that destroyed the harvest or flood waters that threatened life and property. It also became a theme in mythology and the philosophy of nature. Even today, water occupies a special position in most of the world’s religions, especially where the question of survival comes out of solving numerous problems. The goal has been to do justice to all usage claims and guarantee each person the amount of water entitled to him or her. The right of everyone to a sufficient supply of water is given in various international human rights declarations. In the Declaration of Human Rights of 1948, Article 25 states: “Right to adequate living conditions: Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family. Residents have the right to work, to free choice of employment, to just and favorable conditions of work and to protection against unemployment. Everyone, without any discrimination, has the right to equal pay for equal work. Everyone, without any discrimination, has the right to education and to the free choice of an occupation.” The right to water is mentioned again in the International Covenant on Economic, Social and Cultural Rights of 1966, which has been signed by 193 States. In addition, the right to water is written into the constitutions of most countries. In June 2002, the United Nations General Assembly adopted the “World Water Policy Declaration,” which contains the following article: “The right to an adequate supply of water is a fundamental human right.”

Water as a human right

Right to clean water

Following an application by Bolivia, the General Assembly of the UN, with the votes of 122 countries and no dissenting votes, declared on July 28, 2010 that access to clean drinking water and a sanitary basic supply is a human right. 41 countries abstained from the vote, including the United States, Canada and 16 EU countries. Since resolutions of the UN General Assembly are not internationally binding, this has no legal consequences for now. However, the new resolution might support the idea that clean water and sanitation facilities belong to an “adequate” standard of life and that this could lead to a lawsuit based on the legally just like International Pacts regarding economic, social and cultural rights, which includes the right to an adequate standard of living. Some countries such as South Africa and Ecuador have adopted the right to water in their constitutions.

Water consumption

Water consumption is a special role in the Catholic and Orthodox churches. In the Gospel of John, Jesus says: “Whosoever drinketh of the water that I shall give him shall never thirst; but the water that I shall give him shall be in him a well of water springing up into everlasting life” (“John 4,14 LUTHI”).

Significance for cultivation, business and development

Water is a basic requirement for life: without rain there is no drinking water supply, no agriculture, no bodies of water with fish for consumption, no rivers for freight transport, no industry. The latter requires a lot of water for industrial production processes and it is brought back into circulation in a purified form. Because of its high evaporation heat, it is also the form of steam is used to drive steam machines and steam turbines along with heating chemical production facilities. Its high heat conductivity and low thermal expansion makes water suitable as a circulating or evaporating coolant; in Germany in 1991, 29 billion cubic meters were used as cooling water in power plants alone. Water can also be used as a refrigerant (R-718) in refrigeration machines. In salt mines, water is used as a solvent for leaching for transport as a brine as well as the requirement for everyday life (washing, flushing the toilet, etc.) along with what is needed for agriculture, trade and industry (see water for industrial uses). For that reason, it is not just a parameter for the required amount of water but usually also includes the removal or recycling of the waste water (sewage system, sewage plant) created during most water uses. The water volume derived from a supply line is measured with a water meter and used to calculate costs. In 1991, the water demand in Germany was 47,9 billion cubic meters, of which 29 billion cubic meters alone were used as cooling water in power plants. About 11 billion cubic meters were used directly by industry and 1.6 billion cubic meters by agriculture. Only 0.56 billion cubic meters were used for the drinking water supply. The average water demand (without industry) amounts to about 1.30 liters per resident and day (of which about 1.2 liters are in food and drinks, including the water contained in ready-made drinks).

Water supply

Supplying humans with clean water is a huge logistical problem not only for people in developing countries. Only 0.3% of the water reserves worldwide are available as drinking water – this is 3.6 million cubic kilometers of a total of about 1.38 billion cubic kilometers. Water shortage can develop into a water crisis in countries with low rainfall. Adapted technologies are particularly suited to alleviate water shortage. But even ideas that seem to make a lot of sense have been abandoned. Some countries such as South Africa and Ecuador have adopted the right to water in their constitutions.
This story of the separation of the primal couple, which is otherwise incomprehensible in Greek literature, is traced back to the influence of cosmogenic myths from the old Orient, especially — due to its close resemblance to the myth of Apsu and Tiamat — the Babylonian creation myth Enûma elîsh. Only Zeus is more powerful than he is, since Hypnos manages to put the flowing waters of Oceanus but not Zeus himself to sleep. He is the only one who does not participate in the assembly of the gods at Olympus, to which rivers and streams are also invited. He flows around Elysium and delimits the underworld. When Odysseus travels to the underworld, his ship first sails through the stream of the Oceanus river to return east to the island Aeaea across the ocean. Helios rises and sets in it and the stars bathe in it. Oceanus is described as flowing back into itself, which corresponds to his representation on the shield of Achilles by Hephaistos, as it depicts the world: He is the outer edge that flows around the habitable earth. His immediate vicinity is populated by mythical marginal people such as the Ethiopians and Pygmies in the south, the Kimmerians in the north and monsters such as the Harpies in the west. According to Hesiod, the Gorgons, Hesperides and Geryones live in the west of Oceanus and the springs of Oceanus are also located in the west. Nine parts of his waters flow around the world while Styx, as the tenth part, flows in the earth’s interior to spring up from the rock:

And there is housed a goddess loathed even by the immortals: dreaded Styx, eldest daughter of Oceanus, who flows back on himself, and apart from the gods she lives in her famous palace which is overroofed with towering rocks, and the whole circuit is undergirded with silver columns, and pushes heaven. [...] Zeus sends Iris to carry the many-storied water that the gods swear their great oath on, thence in a golden pitcher, that cold water that drizzles down, from a steep, sky-climbing cliffside, and it is one horn of the ocean stream and travels off that holy river a great course through night’s blackness under the wide-wayed earth, and this water is a tenth part of all, for in nine loops of silver-swirling waters around the earth and the sea’s wide ridges, he tumbles into salt water, but this stream, greatly vexing the gods, runs off the precipice.

In Hesiod, Oceanus and Tethys are integrated into the genealogy of the Titans and accordingly appear as descendants of Gaia and Uranus. Their descendants are 3000 rivers and 3000 Oceanides, 25 rivers and 41 Oceanides of which are listed by name, including such important rivers as the Nile, Eridanos and Phasis and with Styx as the oldest Oceanide. It is very distinct from the other Titans in his lack of involvement as the Titans topple Uranus and by fighting against his siblings on the side of Zeus during the Titanomachy.
**PRIVATIZATION OF WATER**

Wikipedia

The debate about a private water supply, which is often summed up with the slogan “Water is not merchandise”, deals with the political and economic aims to organize the water supply as a private economy rather than governmental or communal systems (as before). It covers e.g. the possibility of transferring the entire water supply infrastructure such as wells, water reservoirs and pipe systems into private ownership (which happened e.g. in Great Britain) or just organizing the administration of the water supply through private businesses, usually with temporary operating concessions (such as in France).

At their General Assembly on July 28, 2010, the United Nations recognized that the right to access clean water is a human right; in their developmental policy the right to have access to clean water is a human right; in their developmental policy recommendations, the World Bank and World Trade Organization (WTO) are suggesting that the privatization of the water supply should be accompanied by a regulating authority to monitor the activities of the companies.

Privatization

The privatization is justified with the conviction that private-sector enterprises work more economically than governmental or communal systems. In addition to savings for the state, there is the hope to see qualitative improvements in the water supply. However, compared to communal systems, it has not been possible to empirically verify that a private water supply has greater efficiency, at least for industrial countries.

One of the criticisms of privatization claims that private enterprises often are unwilling to undertake long-term, capital-intensive investments in infrastructure. The completely privatized water supply in London, for example, suffered from numerous leaks because the renovation of the outdated supply network was delayed, contrary to an agreement with the regulatory authority. In Germany, the Green party, CDU, CSU, the left and SPD rejected the privatization of the drinking water supply. Critics also worry that the privatization could result in access to water being denied to poorer parts of the population and that ecological limits to the usage would be ignored.[10] A potential price increase would affect poorer people, who might then be unable to pay the cost of drinking water. This would also be contrary to the United Nations' recognition of the right to access clean water as a human right.

Corporations

The administration of the water supply by the private sector has a long tradition in France. Following the industrial revolution in the 19th century, the water supply of many communities was transferred to listed companies. In the 1950s, during the reconstruction of many municipalities after the Second World War, the responsibility for the maintenance and development of the water supply infrastructure was transferred to private enterprises which in turn could determine the price of water. Following this development, bank-supported corporations were formed that operate worldwide to this day.[11] Although the contracts were very long-term back then with a duration of up to 99 years, their validity is now limited to 12 to 30 years. As far as an international water market has been established, it is dominated by a few French and British corporations, like Veolia Water (formerly Vivendi), Suez and Thames Water. Since the late 1990s, the German RWE had participated in the international water market, but continued focusing on electricity and gas after selling Thames Water in 2006. Other major water corporations include Aguas de Barcelona, SAUR, United Utilities and the Bechtel Corporation.

The internationally operating companies are usually mixed enterprises that also run subsidiaries and participations in the areas of water treatment and water disposal, waste removal, energy supply, the chemical industry and more. Vivendi, for example was also an owner of Universal Studios through Vivendi Universal Entertainment and still holds a fifth of the shares in this media corporation today. According to a report by the journalist Frank Kürschner-Pelkmann, the efforts to privatize the water supply in poor countries as part of globalization, which in his opinion are also partially “ideologically motivated”, have mostly failed. A documentary by the station Hessische Rundfunk has also indicated positive examples in which the privatization in African states led to lower prices and a better supply.

Water supply in the Third World

The water supply has been difficult especially in the south in the Third World. Having access to sources for the water supply and deciding over investments in the infrastructure have become a politically important factor. The Ghanaian geographer Ian Yehosh claims that the privatization of the water supply is characterized by a strategic concentration on particularly profitable areas ("cherry-picking"). Although about 93% of the urban population but only 40% of the rural population in Ghana had access to clean drinking water, the privatization should limit itself to the urban areas with the support of the World Bank. In his perspective, the privatization was therefore operated primarily by the “Eurocentric” urban elites in Ghana.

The Ghanaian economist Franklin Cudjoe thinks that when it comes to the necessary investments, governments have usually proven to be incompetent. Although many people had a water line, he said, this was far from ensuring the water supply. At least private investors would make it possible for more people to be connected to the water supply. Cudjoe is therefore hoping that the water supply will be privatized and he criticizes the mentality of western NGOs that are interested in Ghana’s backwaters. In addition to state-run and private-sector forms of water supply, rural areas in poor countries often also have a functioning water supply based on cooperations or village municipalities.

GATS

The obligation to open the markets through the GATS agreement, the international General Agreement on Trade in Services, which also supports the privatization of the water supply, could result in local and municipal initiatives for a water supply being exposed to predatory competitions and this would no longer make it possible for them to receive government support. Similar discussions about privatization also apply to other parts of the public services that are expected to be liberalized continuously as part of GATS.
CLOUDS
In meteorology, fog or nebula (Old High German nebul, Germanic *nebula m. Nebel (fog), darkness and represented in all Germanic languages, related e.g. to Latin nebulæ haze, and Greek nephele cloud[1] [2]) refers to the part of the atmosphere that contains a fine distribution of water drops and which is in contact with the ground, where the water drops were created through condensation of the water in the humid and oversaturated air. Technically speaking, fog is an aerosol, although it is considered to be among the hydrometeors in meteorological systems.

Fog can be seen because light is subjected to Mie scattering, resulting in the Tyndall effect that makes the actually colorless droplets visible. It is only called fog if the sight distance is less than a kilometer. Sight distances from one to about four kilometers are referred to as haze. Fog in areas with great spatial restriction is called a fog bank and a day where fog appeared at least once is called a fog day.

Fog and haze only distinguish themselves from clouds by their contact with the ground; otherwise they are virtually identical. In rising terrains, a cloud layer can therefore turn into fog at higher elevations. In aviation, these cases are known as low-lying clouds.

If the sight distance is from 500 to 1000 meters, this is a light fog; at 200 to 500 meters a moderate fog and at less than 200 meters a heavy fog. Laymen actually tend to perceive fog only when it has a sight distance of less than 300 meters.

High-speed image of water particles in radiation fog with an air temperature of -2 °C
Altocumulus clouds (lat. altum “height” and cumulus “accumulation”, abbr.: AC) are white and/or grey patches, fields or layers of clouds which generally have self-shadowing formed by scale-like elements, wavy masses or rolls, etc., which sometimes look fuzzy or diffused and might have grown together. Because of the stronger wind, they are often a little more elongated, smaller and have more fraying than lower clouds, but it is still difficult to distinguish them from the stratocumulus and cirrocumulus clouds. There are still some differences: First, the width – altocumulus clouds are up to three fingers wide (with an outstretched arm). All of the layered clouds that are larger are stratocumulus clouds while the cirrocumulus clouds are less than a finger wide. And secondly, the self-shadowing, which does not occur in the cirrocumulus. Clouds without self-shadowing are called altocumulus if the larger part of the cloud sections is one to three fingers wide.

Stratiformis, lenticularis, castellanus and flocus are specific types of altocumulus clouds, as are the subspecies translucidus, perlucidus, opacus, duplicatus, undulatus, radiatus and lacunosus. See the article on clouds for special shapes, accessory and parent clouds.

**History**

The altocumulus cloud species was first named by Émilien Renou in 1855 and finally adopted into the international cloud classification.

**Creation**

- Altocumulus clouds often arise at the edge of an extended layer of air during lifting or turbulence and convection in the middle cloud layer
- Can also be created by the expansion or accumulation of at least a few cloud segments in a cirrocumulus field, by breaking open a stratocumulus layer or through reorganization processes in altostratus or nimbostratus clouds
- Are also formed during the expansion of cumulus or cumulonimbus clouds
- The lens or almond shape usually forms during the local, orographically-induced elevation of a layer of moist air.
A cirrus cloud (Latin cirrus “ringlets of hair”, “fringe”; abbr.: Ci) is a pure ice cloud at a great height. They appear as radiantly white, wispy strands or narrow ribbons with a silky sheen whose edges are often fringed by the upper winds. Cirrus clouds often occur together with cirrocumulus or cirrostratus clouds. If their density increases and other cirrostratus surfaces occur, this can be considered an indicator of a warm front.

**Creation**

Cirrus clouds often develop from virga formations of cirrocumulus or altocumulus clouds or the upper part of a cumulonimbus cloud. However, they can also be created during the reorganization of differently shaped cirrostratus clouds when the thinner parts evaporate. Cirrus tufts with rounded peaks often arise in a cloud-free space. Due to the typical height (8000-12000 meters) at which these clouds appear, the cirrus clouds consist of fine ice crystals.

**Structure and appearance**

Cirrus clouds can appear in the form of thin strands or threads (fibratus) that are interwoven with each other almost linearly, with irregular curves or apparently irregularly (intortus). The strands or threads are sometimes shaped like a comma and end in a hook form or a non-rounded tuft (uncinus). Cirrus can also occur in patches that are so dense that they look faintly grey if seen against the sun. This type of cirrus (spissatus) can also veil the sun, make its outlines indistinct or even cover it completely.

In rare cases, cirrus clouds also occur in the form of isolated, small, round tufts that often feature ragged edges (floccus). Small, rounded turrets or crenellations that grow from a joint base are possible (castellanus). The individual parts of the cirrus clouds are sometimes organized in wide, parallel strands that seem to flow together against the horizon (radiatus).

If they are not too close to the horizon, cirrus clouds look white at all times of the day, even more radiantly than all other clouds in the same area of the sky. This is due to the low optical density of the clouds. If the sun is on the horizon, the cirrus cloud is whitish, while lower clouds can be tinted in yellow or orange. As soon as the sun sinks below the horizon, cirrus clouds that are high in the sky discolor into yellow, then pink, red and finally grey. The color sequences is reversed at dawn.

Near the horizon, cirrus clouds often assume a yellow or orange coloring; these hues are less distinct in the lower-lying cloud species. Halos may appear. Circular halos appear as a result of the low expansion of the cirrus clouds, rarely as a closed ring.

Vapor trails are classified as cirrus clouds as well. They are generated by hot steam that arises due to the combustion processes in the engine turbines of jet aircrafts. Since the cold, thin air at a height of 7,000 to 9,000 meters, where these artificial cirrus clouds occur, can’t absorb a lot of steam in gas form, the excess steam turns into ice needles and therefore clouds with a comparable composition as naturally created cirrus clouds.
Lenticular clouds (len) (Latin “lens shaped” from “lens”) are clouds in the form of lenses or almonds that are often quite elongated and usually have clearly defined outlines. Occasionally there may be iridescence.

These kinds of clouds most often occur with clouds with an orographic origin (also referred to as Foehn clouds) when the air is lifted over the mountains (lee waves). In this case they are stationary even when there is strong wind, i.e. the air streams through the cloud. However, lenticular clouds can also arise as a result of shear waves at the boundary of two air layers lying on top of each other with different wind directions. Then they usually have their own mobility. In the Mediterranean, this cloud formation is a strong indication for an impending mistral.

The Silesian name “Moazagott” (“Matz’ens Gottlieb), spread by glider pilots, originated in the Sudeten Mountains. The term lenticular is mainly used for cirrocumulus, altocumulus and stratocumulus clouds. Due to their unusual shape, they are sometimes misinterpreted as UFOs.
We all came out to Montreux
On the Lake Geneva shoreline
To make records with a mobile
We didn't have much time
Frank Zappa and the Mothers
Were at the best place around
But some stupid with a flare gun
Burned the place to the ground

Smoke on the water
A fire in the sky
Smoke on the water

They burned down the gambling house
It died with an awful sound
Funky Claude was running in and out
Pulling kids out the ground
When it all was over
We had to find another place
Swiss time was running out
It seemed that we would lose the race

Smoke on the water
A fire in the sky
Smoke on the water

We ended up at the Grand Hotel
It was empty cold and bare
With the Rolling truck Stones thing just outside
Making our music there
With a few red lights and a few old beds
We made a place to sweat
No matter what we get out of this
I know, I know we'll never forget
Smoke on the water
A fire in the sky
Smoke on the water
85 % befinden sich unter Wasser, wie in dieser Fotomontage; manchmal mit langen Spornen
**THE SEA OF ICE**

Caspar David Friedrich

The Sea of Ice is a painting by the artist Caspar David Friedrich (1774 – 1840) from the years 1823/1824. It shows an arctic landscape with towering ice floes, some of which on the right side are covering a capsized sailing ship of which only part of the stern and a mast are visible. The oil painting on a 96.7 x 126.9 cm canvas was created during the political pre-March period and during a life stage in which Friedrich's artistic success was fading. The Sea of Ice is therefore generally seen as a depiction of ultimate failure. It has been in possession of the Kunsthalle in Hamburg since 1905 and is considered one of the most important pieces in its collection. Due to a mix-up with another polar painting by the artist, it was referred to as “The Wreck of Hope” until 1965.

“Do you want to know what beauty is? Ask the aestheticians; it might be useful over tea. But in front of the easel, you have to feel what is beautiful.”

Caspar David Friedrich: Comment while viewing a collection of paintings of largely still living and recently dead artists (around 1830)

In 1824, the year of its completion, Friedrich already exhibited the painting in Prague as “An Idealized Scene of an Arctic Sea, with a Wrecked Ship on the Heaped Masses of Ice” and in Dresden as “The Sea of Ice”. Two years later it could be seen in Berlin and Hamburg, this time with the title “View of the sea of ice”.[3] The painting stayed in the artist’s possession until his death and was bought in 1863 from his estate by his friend Johan Christian Dahl (1788-1857). In the estate directory, it was listed under no. 101 as “Ice Picture. The Disaster-stricken North Pole Expedition”. After Dahl’s death, it was entered in an auction in 1859. The auction catalog listed it as no. 91, „Winter Landscape with Large Icebergs or the Wreck of Hope in the Polar Sea after Parry’s Journey“.[4] No one bought it and it continued to be owned by the son, Johann Siegwald Dahl (1827–1902). In 1905, his widow sold it to Alfred Lichtwark (1852–1914), then the director, for the Hamburg Kunsthalle. Under the title “The Wreck of Hope” it became one of the most famous pieces in the collection. In 1965, the art historian Wolfgang Stechow (1896–1974) proved that the title was the result of a mix-up with another polar painting by Caspar David Friedrich, an artwork from 1822 with the original title “A Wrecked Ship off the Coast of Greenland in the Moonlight”. This piece has been considered lost since 1868. It also showed a ship buried by masses of ice in the center, but in contrast to the nameless wreck, the second painting showed the name Hope. A partial transfer of the title, motif and creation history followed in the next decades.[5] In line with the new insights, the painting is again called “The Sea of Ice” in the Hamburg Kunsthalle, just as it was when exhibited in Dresden in 1824. The research by Wolfgang Stechow resulted in a scrutiny of the background of the painting’s creation along with the receptions and interpretations of the image that had been published to date. As of 1973, both paintings are listed in the work directory of Caspar David Friedrich created by Helmut Börsch-Supan and Karl Wilhelm Jähnig.
WAVES
WATER WAVE

Water waves are surface waves at the boundary between water and air or internal waves in the border area between two variously dense water layers in an isopycnic (layered) ocean. According to Walter Munk, this refers to all deflections in the water level with periods from tenths of a second to hours (tidal wave). If the wave lengths are smaller than 4 mm, the water’s surface tension determines the properties of the capillary waves, in which the resilience of the water also has strong dissipative effects. If the wave lengths are larger than 7 cm, the inertia, earth’s gravity and the resulting pressure and movement changes determine the properties of the gravity wave.

Creation of waves

Rocks thrown into the water and obstacles to the flow create waves; moving ships are accompanied by bow waves. Sequeas can cause tsunamis. Here there will be no further reference to the latter, nor to tidal waves; instead the following covers preferably those surface waves in the ocean that are caused by the wind and depend on the water depth.

\[
\text{Crestal Height: } H = \left( \frac{1}{2} \right) \frac{gT^2}{\pi^2} L^2
\]

85% are under water, as in this photomontage; sometimes with long spurs

Wave effects

Reflection

In moving water waves, wave reflection refers to a return of some of the energy (wave energy) at a structure (breakwater, sea wall, embankment) or in locations where the configuration of the natural seabed changes (strongly). In line with the reflection law in optics, another part of the wave energy is conducted at the same time and the remainder is dissipated or absorbed by the processes of breaking the waves, of the fluid and the friction against the seabed, etc. Also see wave transformation, wave absorption.

Refraction

Refraction refers to a change in the waves’ direction of movement depending on the depth of the water. In the case of gently rising beaches, their effect causes the fronts of the waves to bend increasingly parallel to the shoreline so that observers on the beach see the waves (which aren’t necessarily breaking) coming towards them, just as when light is refracted, Snell’s refraction law based on the Huygens principle can be applied.

Diffraction

The bending of wave fronts at the ends of islands or the edges of structures is referred to as diffraction. Just as with the bending of the light on edges, the Huygens principle can be applied here as well. In the case of protective structures (breakwaters and jetties), the diffraction of the wave fronts results in some of the energy of the arriving waves also reaching behind the protective structures or into an area of a port entry that is protected against wave effects by the jetties.

Wave breaking

Wave breaking refers to the critical level of the wave transformation where the surface tension at the crest of the wave has been overcome, the orbital movement loses its characteristic shape and water emerging from the wave contour falls into the frontal slope. About four times of breakers can be differentiated according to their geometry.
"The Great Wave off Kanagawa" (Jap. Kanagawa oki nami ura), actually "Under the wave in the ocean off Kanagawa", is the title of a colored woodcut by the Japanese artist Katsushika Hokusai. The print is part of Hokusai’s image series “36 Views of Mount Fuji”, which was created between 1830 and 1832 and in which he captured the landscapes around the Fujisan in a total of 46 pictures. It shows three boats coming from Edo in a wave off the coast of Kanagawa, which is a district of Yokohama that now has the same name, along with the scenery of Mount Fuji. The boats are of the Oshikuri-bune type, about 12-15 meter-long boats to transport fish.

This piece is one of the images in Japanese art that is best known around the world; it influenced such works as Rainer Maria Rilke’s poem “The Mountain” and Debussy’s composition “La Mer”. Prints are hanging in the Metropolitan Museum of Art in New York City, in the British Museum in London and in Claude Monet’s house in Giverny. As of 2006, the Augustus Bridge in Dresden features the artwork "The Wave" which is a reminder of the Elbe flood in 2002 and was strongly guided by the great wave off Kanagawa.

"Hokusai Katsushika (1760 - 1849) uses a chisel to work on the wood with a practiced swing. Only when the sweeping contours of the wave looming in front of the Fujisan have been preserved as narrow bars is the first plate ready for the wood print.

In contrast to many of his colleagues, who mainly create portraits of Kabuki stars that sell well in Edo, Hokusai prefers to capture everyday scenes and landscapes. Using a test print, he now decides which colors the individual surfaces should receive and then carves a separate printing plate for each color. Up to twelve plates are needed for one image. The artist still does not suspect that the "Great Wave off Kanagawa" will someday be one of the most famous woodcuts ever, a symbol of Japan. Only in 1853, with the forced opening of the country to trade, do the artworks reach Europe, where they inspire such artists as van Gogh or Gauguin."
La nascita di Venere, English: The Birth of Venus is a painting by Sandro Botticelli. The painting is in the Uffizi Gallery in Florence. Just like Botticelli’s “Primavera”, this large-scale artwork was probably ordered for Lorenzo di Pierfrancesco de’ Medici’s Villa di Castello as an homage to the love of Giuliano di Piero de’ Medici, killed during the Pazzi conspiracy in 1478, for Simonetta Vespucci, whose face it likely depicts. In the “Vite”, Vasari describes the picture as “Venus who is born, with the breezes and winds that bring her to earth...”. Jacob Burckhardt refers to the image as “...Venus floating on a shell over the flood” in his “Cicerone”.

In contrast to the title of the work, it depicts not the birth of Venus but actually the subsequent landing of Venus on the beach of Cyprus. According to Hesiod, Aphrodite is a daughter of Uranus. His son Cronus, following the advice of his mother Gaia, cut off Uranus’s genitals with a stroke of the sickle and “cast them behind him” into the sea. The blood and semen mixed with the ocean, which foamed up all around them and gave birth to Aphrodite who then, guided by Zephyrus, first went to Kythira and then on shore at the coast of Cyprus, where she concealed her nudity behind a myrtle.

The depiction of a Venus gliding on a shell is probably taken from the “stanze per la giostra” by Poliziano. In Greek mythology, Venus (Greek Aphrodite, “born from seafoam”) was born from a shell that originated from seafoam, according to the claims of Antiquity. Here the shell is depicted as a scallop.

Venus stands with light feet on a shell which the west wind Zephyr is driving to the shores of Cyprus. However, this is an idealized landscape that could also show traces of Italy. One interpretation holds that Zephyr is carrying Aura, the goddess of the gentle morning breeze, in his arms. Following Botticelli’s other large painting, “Primavera”, it is also possible to interpret him holding the nymph Chloris, who according to Ovid’s “Fasti” (5, 199f.) transforms into flora, the goddess of the spring flower following her embrace with Zephyr. Only the embrace is therefore a prerequisite for a spring-like, procreating event: “genitalis aura favoni”, as written in Lucretius’s didactic poem “De rerum natura” (Book 1, 11). In line with Ovid’s depiction, one way to recognize Chloris is that she spills rose petals from her mouth when she speaks. This image would thus be a thematic variation of “Primavera”, where Venus also occupies a central position in the picture (see image). Venus and Primavera represent two complementary allegories in Botticelli’s work, which entirely corresponds to the ideas of Antiquity. One of the Horae, goddesses of the seasons, hand Venus a robe from the right. The landscape is simplified and idealized here. Simple, short grasses cover the land. Two cattails, plants that don’t actually grow on a beach, frugally and symbolically indicate the shore vegetation while three straight trunks of sclerophyllous trees represent a grove. With its slightly ruffled waves and the seafoam on the coast, the ocean is depicted with similar sparseness, while yet being vivid. The gold sprinkled on the waves, which are drawn in triangular and undulating lines, and the gold on the grasses symbolize a heavenly light. In contrast to the presentation of the landscape and ocean, the myrtles of the Aura become more noticeable, and even more so the magnificence of the robe presented by the Hora, which is decorated with artistic weaving of ornamental daisies. Pretty cornflowers can be seen in the robe of the Hora. Despite her nudity, the goddess is not a symbol of physical but of spiritual love. The chaste pose is probably based on a venus pudica (a modest Venus). The anatomy of Venus does not correspond to the classical realism of Leonardo or Raphael. The neck (which is too long) or the anatomically incorrect position of the left shoulder are more like a precursor of mannerism, although they highlight the beauty of Venus..... Botticelli’s picture may be inspired by a Homeric hymn, in which he sings of the arrival of the goddess on the island: “I will sing of stately Aphrodite, gold-crowned and beautiful, whose dominion is the walled cities of all sea-set Cyprus. There the moist breath of the western wind wafted her over the waves of the loud-moaning sea in soft foam... and there the Horae welcomed her joyously.” The influence of Ovid’s “Metamorphoses” and his “Fasti” as well as that of Poliziano’s verses[5] is just as noticeable. In an era in which almost all paintings represented biblical themes, the birth of Venus is an exception with its depiction of antique mythological figures.

Contrary to theories that Botticelli had used the golden section in this image (e.g. in the proportions of Venus), the Φ factor can’t be exactly measured in this picture.

This representation is one of the most brilliant works in European painting and at the same time the first known glorification of the beauty of a bare woman’s body in its own aesthetic perfection since Antiquity. There are many attempts in literature to interpret erotic, moral or religious intentions between Antiquity and Christianity into this picture. However, in its nearly impersonal absoluteness, the glorification of Venus escapes these various interpretations.
A whirlpool is a swirl or a place in which water or another liquid moves downward in a circular or spiral-shaped motion, where a funnel-shaped indentation can form in the center. Especially interesting are whirlpools that form in the upper runs of rivers due to an uneven subsurface in connection with waterfalls and rapids. Their erosion effect is marked by the formation of whirlpool holes or pot holes. Where water drains into the ocean, whirlpools can form through an interaction of freshwater and saltwater, since saltwater is heavier than freshwater. Whirlpools can also arise through inflow and outflow below the water surface (in deep water), especially due to the intake pipes in power plants for cooling water (freshwater).

Whirlpool in the bathtub[edit]
It is often claimed that the rotation behavior of a whirlpool, such as that in a bathtub, is a result of the Coriolis effect. If the drain is opened, the subsequent whirlpool should move counterclockwise in the northern hemisphere and clockwise in the southern hemisphere, similar to the behavior in the atmosphere of high- and low-pressure areas. But the Coriolis effect only plays a subordinate role here. The whirlpool is influenced by many factors (already existing streams, mode of filling, construction of the drain, surface of the bathtub, etc.), all of which impact the rotational direction much more than the Coriolis effect, which is very slight at the analyzed speeds.

Whirlpools are created in raging streams, which don't exist in the open ocean and only rarely in narrow straits. Examples of whirlpools in nature are:

- Corryvreckan: The dangerous whirlpool in the strait of Corryvreckan has cost the lives of numerous ship crews, people and animals and is a tourist attraction as much as a dangerous area. It is located in the Scottish county of Argyll and Bute at the end of the Sound of Jura between the island Jura and Scarba. It is considered the second strongest ocean whirlpool in the world. In the shipping industry, it was considered the only impassable area in the British islands.

- Moskenesstraumen / Saltstraumen/Maelstrom: This large whirlpool system in front of the Norwegian Lofoten, which is often summarized with the term “Maelstrom” but actually consists of the Moskenesstraumen and the Saltstraumen is often considered the most dangerous stream in the world, due to its flow velocity of 27.8 kilometers per hour. However, it is only a serious danger for small boats.

- Donauwelle: This formerly powerful whirlpool south of Grein in Upper Austria on the north side of Woerth island is no longer dangerous for ships, since the terrain was blasted in 1866. In Regensburg, further up the river, the Regensburg whirlpool is located underneath the bridge Steinerne Brücke. It is caused by the narrow bridge passages.

- Whirlpool: Beneath the Niagara Falls in the Niagara River, whirlpools can be found in a rock indentation that has a diameter of about 300 meters. They have been remediated by now. It is possible to move across the area with a cableway.

- Congo whirlpool: The Congo whirlpool is in the Democratic Republic of Congo in the Congo River. It is located downriver from Vivi. Naruto whirlpools: The extremely strong Naruto whirlpools in a Japanese strait have speeds of up to 20 kilometers per hour.

- Old Sow: The Old Sow is a whirlpool between New Brunswick and Maine. It reaches top speeds of up to 27.7 kilometers per hour.

- Charybdis: Allegedly Charybdis from the Odyssey was located in the strait of Messina between Sicily and the Italian mainland.
The Water Music by Georg Friedrich Handel (1685–1759) is usually divided into three suites (HWV 348, 349 and 350) with a different character and a different cast. Only the second suite has been documented as part of an outing by the English King George I. on July 17, 1717 on the Thames. The orchestra followed the royal barge in separate boats. George I. was so impressed by the music that he asked for the piece and individual sections of it to be repeated multiple times. The performance of the other two suites can’t be dated precisely. The exact sequence of the pieces has not been handed down. The first complete version of the musical score did not appear until 1743 (as an edition for the piano). This gives interpreters a lot of leeway when they perform the piece. The Suites II (D major) and III (G major) are sometimes combined into one. Suite no. 1 in F Major starts with a French overture, followed by slow transitions and lively dances. The second suite gets life from several trumpets while suite no. 3 is kept very intimate.

Report by the Daily Courant from July 19, 1717

English original:
"On Wednesday Evening, at about 8, the King took Water at Whitehall in an open Barge, wherein were Dutchess of Bolton, The Dutchess of New Castle, the Countess of Godolphin, Madam Kilmaseck, and the Earl of Orkney. And went up the River towards Chelsea. Many other of Barges with Person of Quietly attended, and so the great Number of Boats, that the whole River in a manner was cover’d; a City Company’s Barge was employ’d for the Musick, wherein were 50 Instruments of all sorts, Who play’d all the way from Lambeth (while the Barges drove with the Tide without Rowing, as far as Chelsea) the finest Symphonies, compos’d express for this Occasion, by Mr Hendel: which his Majesty liked so well, that he caus’d it to be play’d over three times in going and returning. At Eleven his Majesty came again into Barge, and return’d the same Way, the Musick continuing to play till he landed."
WATERFALL / FOUNTAIN
A waterfall is a section of flowing water (river, creek) in which the stream at least partly transitions into free fall, due to the formation of the rocky underground. The traditional free and vertical fall tends to be an exception among the variety of forms. Usually the waterfall route includes gliding parts which are often reshaped into stepped sections due to the formation of small basins. Depending on the steepness of the valley slopes, this can lead to stair-like cascades or widely spaced sequences of several waterfalls.

Creation and types
In general, flowing water tends to weaken breaks in the slope and create a balanced vertical profile as a result of retrograde erosion and the freight it carries (transport of sand, gravel, etc.) This tendency counters the formation of waterfalls so that cascading steps are only formed and preserved during special occasions. Two distinct types of cascading steps with subgroups can be differentiated:

1. Cascading steps that are solely or partially conditional on the flow dynamics of the water are examples of destructive waterfalls formed by erosion processes
2. Cascading steps that exist without a significant contribution of the flowing water are examples of cascading steps that are increasing or regenerating.

Famous waterfalls
Particularly high waterfalls
The Salto Ángel in south-east Venezuela crashes 978 meters from the table mountain Auyan-Tepui; this makes it the highest single waterfall on earth. Once the sprayed water has collected back into the river, it again pours into the depths over a steep step in the forest. Both waterfalls together have a fall height of almost 1200 m (A few years ago, a double fall with a total height of 1250 meters was discovered in south-east Venezuela, which plunges down from the remote Marahuaca-Tepui). The five-step Tugela Falls are inside the Royal Natal National Park of the South African province KwaZulu-Natal and have a total height of 948 meters. For some time after its discovery, the Peruvian Gocta was considered the third-highest waterfall on earth at 771 meters (double falls). The three-part Yosemite Falls are in the Yosemite National Park and listed as the highest waterfalls in North America with a total height of 739 meters.

Particularly wide waterfalls
The Iguazú Falls in South America at the Iguazú River at the border between Brazil and Argentina, height: 72 m, average flow volume: 1740 m³/s, are spread over a falling edge that is 2700 meters long. The Victoria Falls of the Zambezi between Zimbabwe and Zambia forms the world’s largest “water curtain” in February and March with a width of 1708 m and a drop of 99 m. The average flow volume is 1090 m³/s and at most about 9100 m³/s. The partially only cataract-like Khone Falls of the Mekong form a fall front that is about ten kilometers long and divided by large islands.

Waterfalls with especially high volumes of water
The Khone Falls of the Mekong form a fall front that is about ten kilometers long and divided by large islands. The Dry Falls in the US state of Washington are 5600 m wide and 120 m high and during the Missoula floods, they drained ten times the amount of all rivers existing today. This makes them the largest known waterfalls in the history of the earth. In terms of volume, the Guaira Falls or Sete Quedas Falls of the Paraná were considered the largest waterfalls on earth, until they were flooded by the stored-up water at the Itaipú dam. A little later, the Brazilian government blasted sections of it to facilitate navigation in the reservoir. This has made a potential recultivation impossible. The Niagara Falls between the United States and Canada, height: up to 59 meters, average flow volume: 6000 m³/s, are the falls with the most water in North America. With its frequently disrupted edge with a total height of 64 meters and a length of about 5 kilometers, the Salto Pará of the Río Caura (tributary of the Orinoco) is not just one of the widest waterfalls in the world but, at 2830 m³/s also one of the falls with the most water. The Cachoeira de Paulo Afonso of the Rio São Francisco plunges 81 meters into a gorge with a water volume of about 2830 m³/s (strong water removal by a hydropower plant).
MAY THIS BE LOVE
(aka. WATERFALL)

Jimi Hendrix

Jimi Hendrix / Are You Experienced? (1967) / May This Be Love guitar tab

Intro:
(w/slide)
G             C                E

verse:
E  F#m7(add2)/E  A7  E
- 0  - 0  - 0  - 5  - 0
- 2  - 2  - 2  - 1
- 4  - 4  - 0  - 4
- 2  - 2  - 2  - 2

licks between verses:
(w/slide)

Solo:
- 0  - 0  - 0  - 0  - 0  - 0  - 0  - 0
- 0  - 0  - 0  - 0  - 0  - 0  - 0  - 0
- 0  - 0  - 0  - 0  - 0  - 0  - 0  - 0
- 0  - 0  - 0  - 0  - 0  - 0  - 0  - 0

Lyrics:
E  F#m7(add2)/E
Waterfall nothing can harm me at all.
A9
My worries seem so very small with my waterfall.

E  F#m7(add2)/E
I can see my rainbow calling me.
A9
Through the misty breeze of my waterfall.

Bridge
D                  G#  A  A#
Some people say day-dreaming's for all the huh!
B                  E5
Lazy minded fools with nuthin' all to do.
D                  A  A(add9)  G#  G
So let then laugh, laugh at me.
F#  (Spoken)  So just as long as I have you
D  A  A(add9)
(Sung) to see me through
B
I have nuthin to lose 'long as I have you.

E(add9)  F#m7(add2)/E
Waterfall, don't ever change your ways,
A(add9)
fall with me for a million days,
E  E
E oh my waterfall.

Solo
The Niagara Falls are waterfalls in the Niagara River at the border between the US state New York and the Canadian province Ontario.

Niagara Falls is also the name of the two sister cities Niagara Falls in the US state New York and Niagara Falls in the Canadian province Ontario in whose center the falls are located.

Descents and crossings

Numerous descents have been attempted at these waterfalls. Some people, for example, dropped down the falls in cushioned barrels or in boats. The first documented case comes from 1829. About every second attempt ends fatally. The 63-year-old teacher Annie Taylor was the first person to successfully descend the falls. She took the plunge in a wooden barrel on October 24, 1901. Attempts to descend the falls are a criminal offense and have been punished with relatively high fines or prison since the 1980s. Because the Niagara Falls on the US side have a lower current and drop onto a large amount of rockfall since 1954, it is not known if anyone ever descended this section of the falls and survived.

On July 9, 1960, the 7-year-old Roger Woodward went overboard from a capsized motorboat and plunged down the falls. He wore a life jacket and was saved by the crew of the excursion boat “Maid of the Mist II” which happened to be nearby. Aside from a slight concussion, for which he was treated at the local hospital for three days, he was uninjured. Two passengers pulled his sister Deanne out of the current of the Niagra River a few yards above the falls.

James Honeycutt from Niagara Falls (New York), a family friend who had taken the siblings along on the boat ride, did not survive his drop over the falls; his body was found after four days.

Kirk Jones from Canton, Michigan, is the first person known to survive a plunge from the Niagara Falls without any aids. He threw himself off the Horseshoe Falls on October 29, 2003 and survived with two broken ribs, contusions and abrasions. He was temporarily admitted to the psychiatric section of the hospital in Niagara, where he claimed to have planned his action to commit suicide. Relatives contradicted this claim and stated that Jones’s goal had been to get famous and find work. Subsequent statements by Jones suggested that he had considered both options as a possibility.

On June 16, 2012 CET the 33-year-old US high-wire artist Nik Wallenda, grandson of the famous German acrobat Karl Wallenda (1905–1978) was the first to cross the Niagara Falls at the Horseshoe Falls with the aid of a wire stretching between the US and Canadian sides. He completed the 330-meter route in about 25 minutes. Wallenda’s feat was broadcast live by the US TV station ABC.
NEW YORK CITY WATERFALLS

Olafur Eliasson

New York City Waterfalls is a public art project by artist Olafur Eliasson, in collaboration with the Public Art Fund, consisting of four man-made waterfalls placed around New York City along the East River. The most famous was at the Brooklyn Bridge in lower Manhattan. At $15.5 million, it is the most expensive public arts project since Christo and Jeanne-Claude's installation of The Gates in Central Park. The waterfalls officially began flowing on June 26, 2008. They ran from 7 am to 10 pm (under illumination after sunset), until October 13, 2008.

The sites chosen for the four waterfalls were the East River Esplanade's Pier 35 in Manhattan; beneath the Brooklyn Bridge in DUMBO; between piers 4 and 5, also in Brooklyn; and Governors Island.

Work on erecting the four support scaffolds began in mid-March, 2008. On the shore of Governors Island construction teams used pile driving to secure the scaffolding in place. This method was not used at the other locations for various reasons, including the effects of vibrations through car and subway tunnels. Once completed, the scaffolding would total 64,000 square feet (5,900 m2) and weigh 270 tons.

Eliasson has said that the scaffolds themselves were designed to blend in with their urban surroundings, but that he purposely did not try to conceal them, explaining he "want[s] people to know that this is both a natural phenomenon and a cultural one." Construction involved the work of 108 different people, including two environmental consultants. The installation was designed to be ecologically-friendly. Some example of this are energy efficient LED lighting by USA based LED Lighting Designers & Manufacturers Boca Flasher, Inc., energy purchased from renewable sources and the filters used to keep aquatic life from taking a ride up-and-over the waterfall. When the project closed the materials were intended to be made available for re-use in a future project.[4]

Costs[edit]
The over $15 million project had no city funding and was paid for entirely by private organizations, business and donors. Mayor Michael Bloomberg's company, Bloomberg LP, donated $13.5 million. With estimates that the waterfalls could generate up to $55 million for the local economies, the Lower Manhattan Development Corporation gave $2 million to the effort.

Environmental impact
During the run, trees and shrubs along the Brooklyn Heights Promenade were damaged as a result of the saltwater blown into the parks during high winds. Several steps were taken to solve this problem which included cutting the running time to 50 hours a week instead of the original 101.[6] At the Brooklyn Bridge, the owner of The River Cafe claimed customer loss and plant replacements as a result of the winds on the falls. The known damages were getting attention to the point that The Brooklyn Heights Association asked the committee to take down the falls after Labor Day, instead of the original date; however, there was no response.
The DWC works as a computer controlled "water plotter" that displays graphics, patterns and texts onto cascading water, by switching fast acting valves on and off. This produces falling segments of water that serve as pixels, creating an extraordinary display that is constantly scrolling downwards.
Fountains / Geysers

Fountain (from Latin fontanus: belonging to the spring (Lat.: fons)) generally refers to the form of material that is shot upward to a surface more or less vertically in a jet. A geyser (Icelandic geysa – set into intense motion) is a hot spring that ejects its water at regular or irregular intervals as a fountain. This is referred to as an eruption. The term for geysers originated with the Great Geysir in Iceland.

Beehive geyser in the upper geyser basin of the Yellowstone National Park - USA.

The Dubai Mall in front of the Burj Khalifa: The largest fountain system in the world (275 meters long with fountains up to 150 meters high)
RICE TERRACES
ARCHITECTURE
DILLER SCOFIDIO + RENFRO

Blur Building at Expo.02 in Yverdon
FALLING WATER
Frank Lloyd Wright

Fallingwater, originally known as the Kaufmann House after Edgar J. Kaufmann, a warehouse owner in Pittsburgh, is one of the most famous private houses designed by the US architect Frank Lloyd Wright. Model.

It was built between 1935 and 1937 and is one of the best-known buildings in the United States. Along with Villa Tugendhat, Villa Savoye and the Schminke house, it is one of the most significant representatives of residential buildings in modernism.
NINE FLOATING FOUNTAINS

Isamu Noguchi
EXHIBITION PAVILION DEVOTED TO THE WATER CYCLE

NOX - Lars Spuybroek
AQUARIEN
GEORGIA AQUARIUM