

Weather Forecast

Made by IISS Carlo Alberto Dalla Chiesa

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HOW TO MAKE A WEATHER FORECAST?

WHAT IS A WEATHER FORECAST?

Weather forecasting is the application of science and technology to predict the state of the atmosphere for a given location.

For ages the humanity tried to make a prevision on the weather and today weather forecasting is an essential part of our life.

Nowadays we have new technologies and forecasting is more accurate.

1st STEP

Observation... we can use:

- **Satellites** to see the situation from the Space;
- **Radar** to see where it's raining;
- **Monitoring networks** to receive information about atmospheric pressure or humidity.



2nd STEP

The **weatherman makes previsions** referring his experience and what he sees.

3rd STEP

Then he puts the information into particular models: **Global Models**.

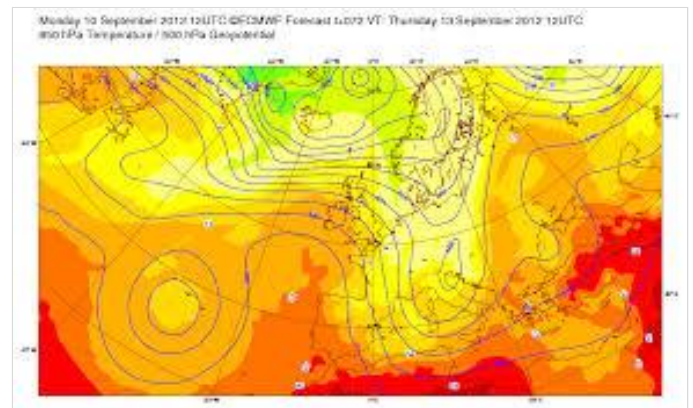
The most important GM are:

- **GFS (American)**
- **ECMWF (English)**

There are **lots of GM** because every country **has different physical conditions**.

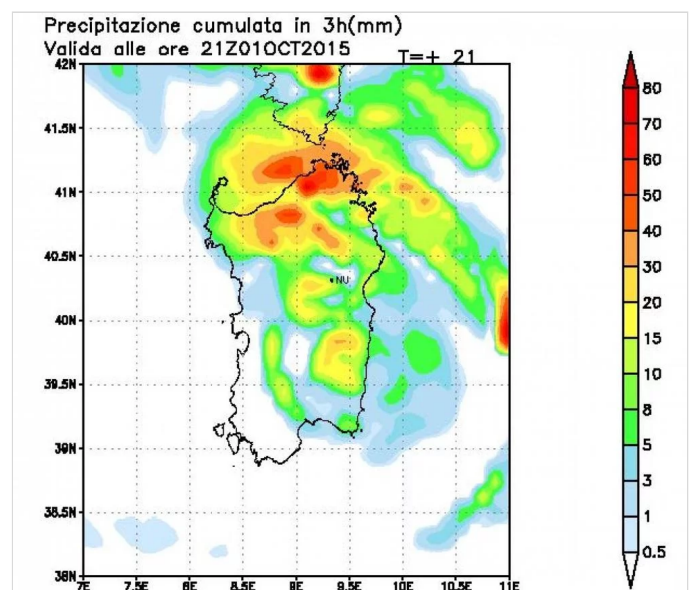
In a GM **white lines** represent the pressure variation at ground; the **colours** represents the pressure variation in height.

This is not the real forecast, it's only an hypothesis.



4th STEP

The weatherman can also use a **Local Area Model** which is more accurate because it splits a smaller area in a grid. Smaller is the area, more accurate will be the forecast



5th STEP

The weatherman reads all the data and with his experience and his thinking, tries to prewise what will be the weather like.



HOW DO WE FORECAST THE WEATHER?

Video made by Eumesat.

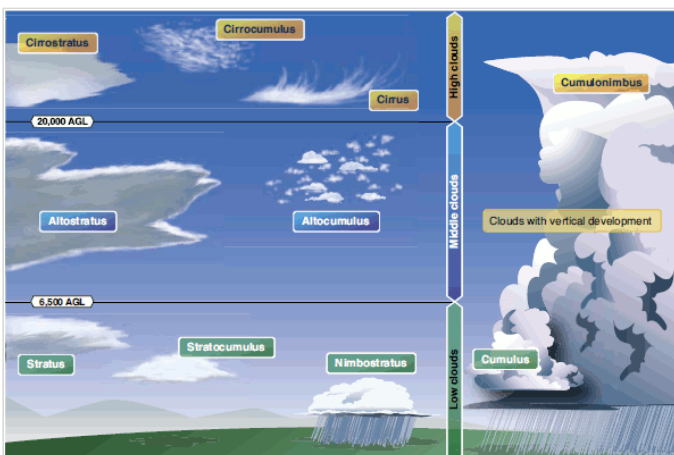


How do we forecast the weather?

This new cartoon, narrated by Konnie Huq, asks how weather forecasting works and how forecasts help us plan ahead. To learn more about the weather and how satellites help in forecasting, take a look at EUMETSAT's education portal, the Learning Zone - <http://www.l-zone.info/weather>

YOUTUBE

Types of clouds



TIPS

When you consult a weather forecast **you shouldn't**:

- o Trust automatic weather forecast;
- o Trust weather forecast for days too far.

THE MOST COMMON ATMOSPHERIC PHAENOMENA

WIND

Many factors make up the wind, like difference of pressure in the atmosphere, but there are also other ones..



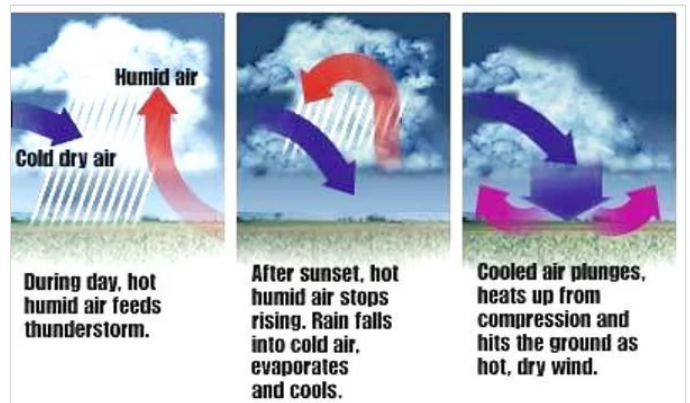
What Makes the Wind

What makes the wind? Find out in this video narrated by Extension Educator Duane Friend.

YOUTUBE

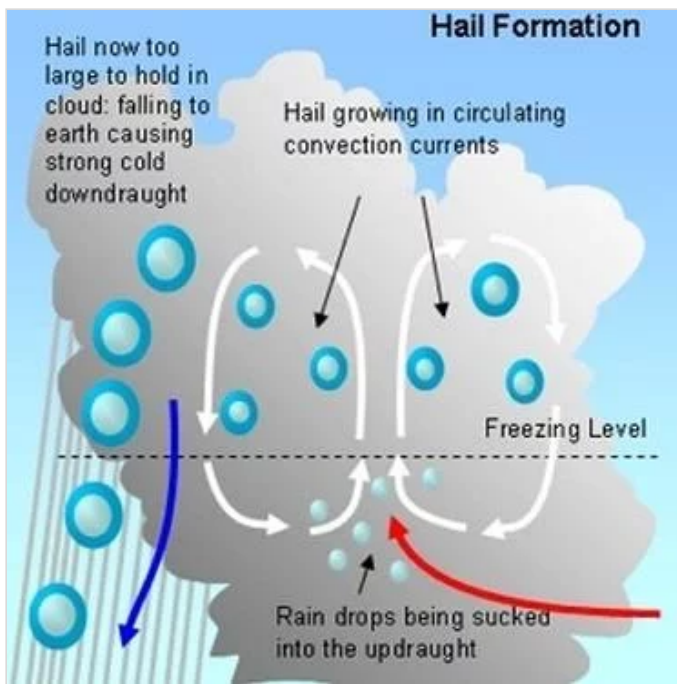
HEAT THUNDERSTORM

An heat thunderstorm forms when the intense sun rays make water evaporate. The water vapour raises up and forms a cumulonimbus, the thunderstorm cloud. This happens in summer.



HAIL

An ice storm forms when ascensional currents make ice crystals become bigger and bigger in the cloud then they fall down.



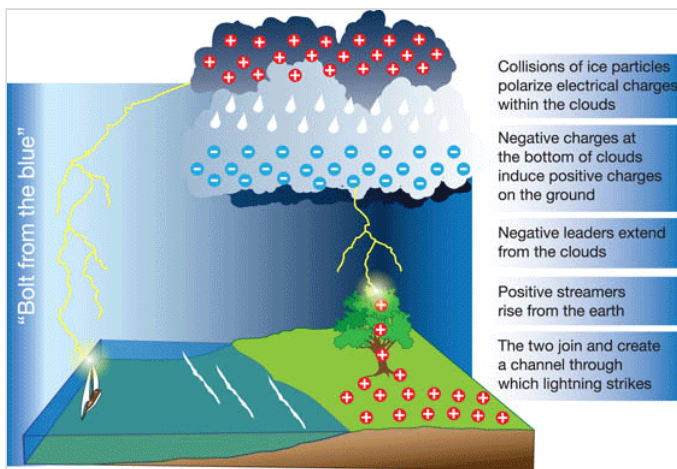
How do tornadoes form? - James Spann

View full lesson: <http://ed.ted.com/lessons/how-do-tornadoes-form-james-spann> Tornadoes are the most violent storms on Earth, with wind velocities that can exceed 200 miles per hour. How do these terrifying cyclones form? Meteorologist James Spann sheds light on the lifespan of tornadoes as they go from supercell thunderstorms to terrible twisters before eventually dissolving back into thin air.

YOUTUBE

LIGHTNING

The negative charge contained in the clouds is attracted by the earth, positively charged. The air, which is an insulator, keeps them separated but sometimes negative charges manage to reach the earth and lightning is born.



THE STRANGEST AND MOST BEAUTIFUL ATMOSPHERIC PHENOMENA

TORNADO

The most beautiful but also dangerous phenomena in the world.

RAINBOW

Is there a golden pot at his end? No, the rainbow forms when sun rays are refracted by the water drops and the light is broken up into the seven colours.



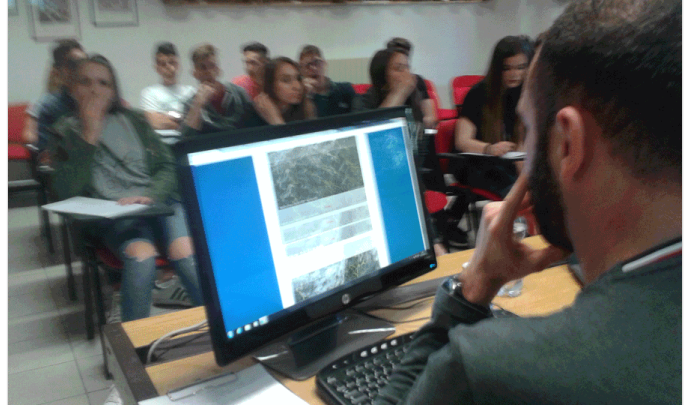
Sometimes there can be more than one rainbow.

BALL LIGHTNING

We still don't understand how do this "magic" lightning forms, but they can appear outside and also inside houses, as our weatherman says.



OUR LESSON



CATATUMBO LIGHTNINGS

In northern Venezuela there is the most electrical part of the earth, with 293 lightnings per year every square kilometer.



THANKS

For the realization of the project a special thanks to **Francesco del Francia**, the weatherman that has provided us information.

<http://www.meteoaquesio.it/>
