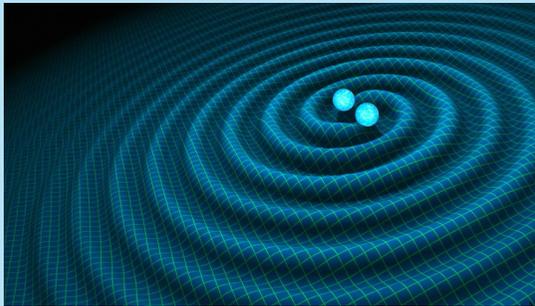


Gravitational Wave First Observations

I) Gravitational wave discovery

On September 14th 2015, gravitational waves have been detected for the first time by LIGO.

The observations match with Einstein's predictions for the merger of a binary black hole system.



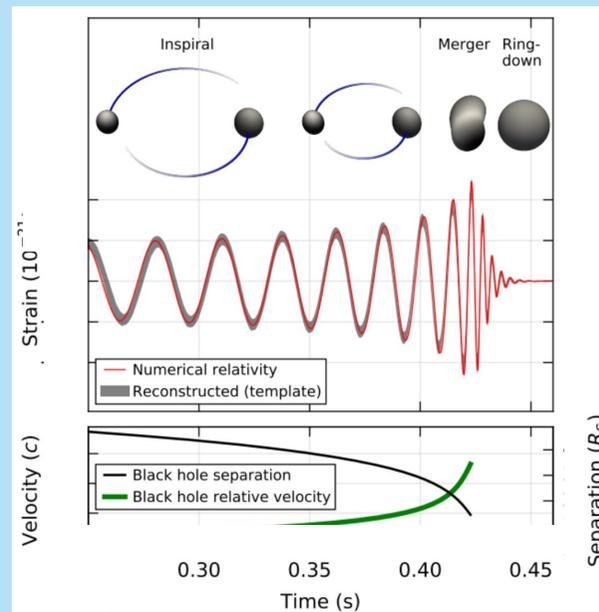
II) But what is a Gravitational Wave ?

Einstein's Theory shows that the gravitation is not a force as it is considered in classical mechanics, but it is a strain of space-time due to the mass of a body.

Gravitational waves are a variation of space-time diffusing as a wave.

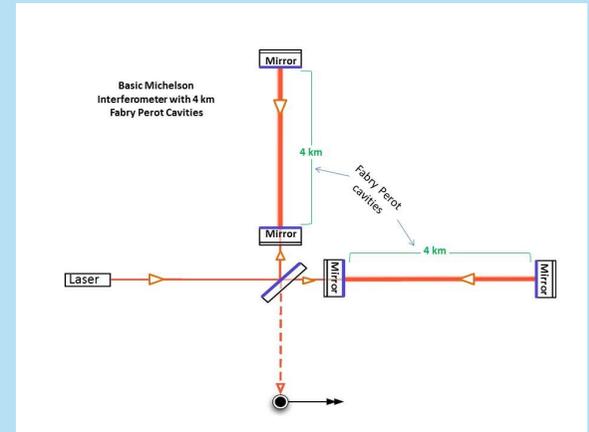
General relativity predicted them when huge mass are accelerated.

The measures obtained by scientists match with Einstein's prediction.



Schemes of a binary black hole merger and the measured wave.

III) How was it measured ?



LIGO (Laser Interferometer Gravitational-Wave Observatory) uses classic interferometers (with huge dimensions) to measure very little local variations of distance.

IV) Conclusion

These measures are the first observation of a binary black hole, and the first direct observation of gravitational waves.