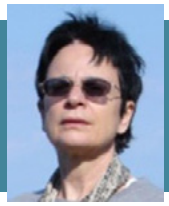
INTERNATIONAL SOLVAY INSTITUTES BRUSSELS

Solvay Colloquim

Professor Luisa Bonolis

Max Planck Institute, Germany



From white dwarfs to gravitational collapse: the emergence of relativistic astrophysics

This year we are celebrating the centenary of the Einstein field equations, the capstone of the general theory of relativity. Over these one hundred years the theory has evolved from a revolutionary mathematical theory with a limited empirical basis to an observationally and experimentally based cornerstone of modern physics and cosmology. However, just a few years after the spectacular confirmation of one of its few empirical predictions - the gravitational deflection of light - the theory of general relativity entered what has been called a "low-watermark period", during which it was perceived by physicists as a highly formalistic subject, and remained cut off from the mainstream of physics.

Things definitely changed in the 1960s, when general relativity became an extremely vital research stream of theoretical physics in connection with major astrophysical discoveries. Quasars, the Cosmic Microwave Background radiation and pulsars - soon identified as rotating neutron stars - led to the recognition that physical processes and astrophysical objects exist in the universe that are understandable only in terms of the general theory of relativity.

Why were relativists in the 1960s able to react so quickly to new astrophysical discoveries? Which developments prepared and laid the conditions for the emergence of a new field combining General Relativity with Astrophysics?

Recent results of historical research will be presented, outlining some relevant aspects of this complex process, that contributed to lay the foundations for the establishment of general relativity as a standard working tool of theoretical astrophysics.

Tuesday 8 December 2015 at 4.00 P.M.

COFFEE AND TEA WILL BE SERVED AT 3.45 P.M. IN FRONT OF THE SOLVAY ROOM

SOLVAY ROOM

Building N.O. - 5th Floor
Université Libre de Bruxelles
Campus Plaine - Boulevard du Triomphe
Access 2- 1050 Brussels

Vrije Universiteit Brussel · ULB · SOLVAY · FÉDÉRATION WALLONIE-BRUXELLES · RICHTING MORGEN

www.solvayinstitutes.be