

Solution of Einstein Equations

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ABSTRACT

In this lecture I shall not try to enter into the mystery of the action of gravity through eventual graviton exchange, neither in its quantization. Following J. V. Narlikar in his second Vaidya- Raychauduri Endowment Lecture I shall quote from Newton's letter to Bently "...cause of gravity is what I do not pretend to know and therefore would take more time to consider of it". I shall only try to give a short review of what mathematicians know today about the general solutions of Einstein field equations of classical General Relativity, comparing it sometimes on the way with the stronger results obtained in recent years for the so called Yang-Mills equations which govern the three other fundamental fields: the electromagnetic, weak and strong interactions.