Séminaire

Non-GR approaches to Gravitational Radiation

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Around 1979 there were controversies about the validity of the Einstein Quadrupole Formula for gravitational radiation raised by the work of Ehlers, Rosenblum, Goldberg and Havas. One of the motivations for this was the somewhat clumsy treatment of the problem by Einstein. Even the improved treatment found in Landau and Lifshitz had some lacunae.

I investigated this problem from the point of view of spin-2 theories in two different ways. One was a Feynman graph derivation (with V. Soni) based on the Einstein-Hilbert action. Second one was through the techniques of low energy theorems found to be very powerful in particle physics. The low energy theorems do not require any particular action, and they yield GR as the universal low energy limit. Both vindicated the Einstein formula.

In this talk I shall describe both approaches. I will also discuss how the low energy theorems work in other particle physics contexts. I will sketch how one can go beyond the leading order analyses for both electromagnetic and gravitational radiation.

Mardi, 30 aôut, 2016, à 11:00
Pavillon Roger-Gaudry, V-221
Café-biscuits à 10 :45 au V-214

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