Atelier API "Ondes gravitationnelles et objets compacts"

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Initial data for binary systems

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Numerical relativity enables to simulate the full coalescence of binary compact objects. Using appropriate initial data for such evolutions is crucial. This is not an easy task: not only should those data describe as accurately as possible the physical situation one wishes to simulate, but they also must verify a subset of Einstein's equations known as the constraint equations. I will adopt an historical approach, and move my way through the decade long history of the initial value problem in general relativity, starting from the original work of Misner, Brill and Lindquist in the 60s to the state-of-the-art, currently used, refined data.

Auteur principal:GRANDCLÉMENT, Philippe (LUTH)Orateur:GRANDCLÉMENT, Philippe (LUTH)Classification de Session:Contributed talks