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THE FORMATION OF BLACK HOLES IN GENERAL RELATIVITY

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Abstract: I shall talk about my recent monograph, the subject of which is the formation of black holes in pure general relativity, by the focusing of incoming gravitational waves. The theorems established in the monograph constitute the first foray into the long time dynamics of general relativity in the large, that is, when the initial data are no longer confined to a suitably small neighborhood of Minkowskian data. The theorems are general, no symmetry conditions on the initial data being imposed. The central new idea is something that applies to all systems of Euler- Lagrange equations of hyperbolic type and provides the means by which many problems can be solved which have seemed unapproachable.

P.S. The monograph I am referring to is posted on arxiv at:
<http://arxiv.org/abs/0805.3880>