1056-83-7 **Igor Rodnianski*** (`irod@math.princeton.edu`), Department of Mathematics, Princeton University, Princeton, NJ 08544. *Evolution problem in General Relativity.*

The talk will introduce basic mathematical concepts of General Relativity and review the progress, main challenges and open problems, viewed through the prism of the evolution problem. I will illustrate interaction of Geometry and PDE methods in the context of General Relativity on examples ranging from incompleteness theorems and formation of trapped surfaces to geometric properties of black holes and their stability. (Received September 22, 2009)