

## Invited Speaker

**Name:** Thomas Sotiriou

**Affiliation:** University of Nottingham

**Title:** Black Hole Scalarization

**Abstract:** Strong gravity observations are providing new insights into the structure of compact objects and can potentially detect new fundamental fields if they affect it. However, such fields have not been detected in high-precision weak field test so, if they exist, there ought to be some mechanism that suppresses them there. Spontaneous scalarization does precisely that. Models that predict this phenomenon for neutron stars date back to the 90s and have been studied thoroughly. More recently it was understood that more general models can lead to black hole scalarization. Moreover, it has been shown that scalarization can be triggered, not only by curvature, but also by spin. Hence, black holes in certain mass or spin ranges can have scalar hair, while outside these ranges they would be described by the Kerr metric, as in general relativity. I will give an overview of the recent developments and future prospects in this topic.