Contribution ID : **758**   Type : **Oral talk**

Scattering d-waves on distorted black holes

Tuesday, 6 October 2020 18:45 (20)

The recent developments in the GR waves interferometry require more relevant theoretical models of GR waves generation and propagation. Leaving apart of possible mechanisms of the spin-2 space-time perturbations production, we will consider the case of their subsequent propagation with possible scattering on another black holes. Specifically, we consider a generalization of the Regge-Wheeler equation for the case of distorted black holes (black holes in surrounded matter) in Minkowski and AdS spaces, the metric potential of which obeys the Liouville equation (T. Moskalets & A.J. Nurmagambetov Eur. Phys. J. C55 (2015) 551). The absorption cross-section is computed for spin-2 particles (the axial perturbations over the background metric) in the small black hole and long-wave approximations. The subsequent analysis of the problem results in finding the natural restriction for the maximum angular momentum of the scattering/absorbed waves and in establishing the spectrum of the absorbed frequencies in AdS$_4$ space. In sum up we find a good agreement of the established results with the early obtained (A.A. Starobinski & S.M. Churilov Sov. Phys. JETP 65 (1974) 1).

Primary author(s) :   NURMAGAMBETOV, Alexei

Presenter(s) :   NURMAGAMBETOV, Alexei

Session Classification :   Gravitation and Cosmology

Track Classification :   Gravitation and cosmology