Poster Session #C
Gravity theories

C17

Exact solution for wave scattering from black holes

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Scattering theory is a powerful tool to explore black hole physics. We establish an exact formulation for wave scattering of a massless spin-s field by Kerr-Newman-de Sitter black hole. Our formulation is based on the exact solution of the Teukolsky equation in terms of the local Huen function, and does not require any approximation. It serves simple exact formulae with arbitrary high precision, which realize fast calculation without restrictions on model parameters. We highlight several applications including the quasinormal mode, the cross section, the reflection/transmission rate, and the Green function.