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Simulating Black-Hole Radiation.

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Abstract content
 (Max 300 words)

We study the emission spectrum for black-holes to better understand their thermodynamic properties. Angular momentum contributes significantly to the coupling of quantum fields to black-holes. This establishes a connection between the internal state of a black-hole and the characteristic radiation of the associated particles. We find that for each type of field there is a specific coupling to the black-hole and a characteristic emission spectrum, identified by a collection of emission frequencies called quasi-normal modes. These characteristic emission modes carry energy away from the black-hole in a way analogous to how energy is carried away from a ringing bell by sound waves. Since emission of each quantum of energy by the black-hole is statistically weighted, we use numerical simulations to build a collective particle emission signature which can be used to identify the decay of a given black-hole.

Apply to be
 considered for a student
 award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
 PhD)?

PhD

Main supervisor (name and email)
and his / her institution

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Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

No

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