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# Decoding a black hole metric from interferometric patterns of relativistic images

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Photons emitted by light sources in the neighbourhood of a black hole can wind several times around it before fleeing towards the observer. For spherically symmetric black holes, two infinite sequences of images are created for any given source, asymptotically approaching the shadow border with decreasing magnitude. These sequences are reflected by a characteristic staircase structure in the complex visibility function that may be used to decode the properties of the black hole metric. Recalling the formalism of gravitational lensing in the strong deflection limit, we derive analytical formulae for the height, the width and the periodicities of the steps in the visibility as functions of the black hole parameters. These formulae can then be used to track the changes in the visibility for different metrics and ultimately test General Relativity.

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