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GrayHawk: A public code for calculating the Gray Body Factors of massless fields around spherically symmetric Black Holes

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We introduce and describe **GrayHawk**, a publicly available Mathematica-based tool designed for the efficient computation of gray-body factors for spherically symmetric and asymptotically flat black holes. This program provides users with a rapid and reliable means to compute gray-body factors for massless fields with spin $s = 0, 1/2, 1, 2$ in modes specified by the angular quantum number l , given a black hole metric and the associated parameter values.

GrayHawk is preloaded with seven different black hole metrics, offering immediate applicability to a variety of theoretical models. Additionally, its modular structure allows users to extend its functionality easily by incorporating alternative metrics or configurations. This versatility makes **GrayHawk** a powerful and adaptable resource for researchers studying black hole physics and Hawking radiation.

The codes described in this work are publicly available at <https://github.com/marcocalza89/GrayHawk>.

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