



## **Geometrical optics and spin-helicity effects**

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The Belem group have recently shown a "spin-helicity effect" in the absorption of circularly-polarized electromagnetic & gravitational waves by a Kerr black hole, in which the counter-rotating helicity is more absorbed than the co-rotating helicity. The difference in the absorption cross sections scales with the wavelength, so the helicity-dependence disappears in the zero-wavelength limit. The aim of this talk is to extend geometrical optics beyond leading order to understand this effect.