Self-interaction correction to black hole radiation for Einstein-Gauss-Bonnet gravity.

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In this work, we study the self-interaction correction to black hole radiation for Einstein-Gauss-Bonnet gravity. The effective trajectory of a massless shell is determined by solving the constraint equations and the semiclassical tunneling probability is calculated. As in the case of general relativity, the radiation is no longer thermal and the correction to the thermal spectrum is precisely in the form that one would expect from an underlying unitary quantum theory. Our result shows that the thermodynamic properties of black hole space-time transcend beyond general relativity to well-motivated models of higher curvature gravity.