Title:	Black Holes: Eliminating information or illuminating new physics?
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Abstract:	Black holes, initially thought of as very interesting geometric constructions of nature, over time, have learnt to (often) come up with surprises and challenges. From the era of being described as merely some interesting and exotic solutions of \gr, they have, in modern times, really started to test our confidence in everything else, we thought we know about the nature. They have in this process, also earned a dreadsome reputation in some corners of theoretical physics. The most serious charge on the black holes is that they eat up information, never to release and subsequently erase it. This goes absolutely against the sacred principles of all other branches of fundamental sciences. This realization has shaken the very base of foundational concepts, both in quantum theory and gravity, which we always took for granted. Attempts to exorcise black holes of this charge, have led us to crossroads with concepts, hold dearly in quantum theory. The sphere of black hole's tussle with quantum theory has readily and steadily grown, from the advent of the Hawking radiation some four decades back, into domain of quantum information theory in modern times, most aptly, recently put in the form of the firewall puzzle. Do black holes really indicate something sinister about their existence or do they really take the lid off our comfort with ignoring the fundamental issues, our modern theories are seemingly plagued with? In this review, we focus on issues pertaining to black hole evaporation, the development of the information loss paradox, its recent formulation, the leading debates and promising directions in the community.
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