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Dark matter, black holes, and gravitational waves

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The interplay between dark matter and black holes remains largely unexplored. Dark matter can in principle be *made of* black holes, as long as these are primordial, i.e. they are formed in the very early universe. Dark matter can also *accumulate around* black holes, and modify the rich phenomenology exhibited by these objects. After an overview of the status of dark matter searches, I will discuss the prospects for detecting primordial black holes or robustly ruling them out as dark matter candidates. I will then discuss the prospects for characterizing and identifying dark matter using gravitational waves, covering a wide range of dark matter candidate types and signals.

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