

## Ministry of Science and Higher Education

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## Dark Matter Decay According to CCC: Detectable **Gravitational Signals?**

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In the cosmological scheme of conformal cyclic cosmology (CCC), the equations governing the crossover form each aeon to the next demand the creation of a dominant new scalar material, postulated to be dark matter. In order that this material does not build up from aeon to aeon, it is taken to decay away completely over the history of each aeon. The dark matter particles (erebons) may be expected to behave almost as classical particles, though with bosonic properties, being probably of about a Planck mass, and interacting only gravitationally. Their decay would be to gravitational signals, and responsible for the ("scale invariant) temperature fluctuations in the CMB of the succeeding aeon. In our own aeon, erebon decay might show up in signals discernable by gravitational wave detectors.

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