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The vacuum's dark particles behave like dark matter and dark energy JOHN HALLER, CCC Information Services — Building on the governing hypothesis that self-information is equal to action, I solve for the time step of the vacuum. The resulting equations (both quantum diffusion and Friedmann's equations) argue that a dark particle, or special black hole, exists at hbar or twice the reduced Planck mass where the Hawking temperature breaks down. It is hypothesized that if neutral hydrogen is nearby the dark particles are able to couple with the background field and thus have a density that looks like dark matter. If hydrogen is not around, the dark particles become frozen leading to a constant density of black body radiation similar to dark energy. If the Universe's dark particles (away from neutral hydrogen) became frozen during the re-ionization of the Universe's history, its BBR density is well within confidence ranges for the cosmological constant. This hypothesis can also explain the recent observations that dark matter decays into dark energy.

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