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Two ideas in dark matter model building

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The first idea relates to the asymmetric dark matter mass scale. To explain the cosmological coincidence between the ordinary and dark matter mass densities, one needs a rationale for why the dark matter mass scale is of the order of the proton mass. I present an analysis of how infrared fixed points in the running of the ordinary and dark QCD coupling constants can be used to achieve this aim. The second idea, to be covered more briefly, is about relating axion dark matter to neutrino mass generation, leptogenesis and inflationary cosmology within a variant DFSZ framework for solving the strong-CP problem. These ideas are obviously orthogonal to each other. Both should be taken as thought experiments.

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