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WIMPy Leptogenesis With Absorptive Final State Interactions

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We consider a class of leptogenesis models in which the lepton asymmetry arises from dark matter annihilation processes which violate CP and lepton number. Importantly, a necessary one-loop contribution to the annihilation matrix element arises from absorptive final state interactions. We elucidate the relationship between this one-loop contribution and the CP-violating phase. As we show, the branching fraction for dark matter annihilation to leptons may be small in these models, while still generating the necessary asymmetry.

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