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Supersymmetric SO(10) Inflation QAISAR SHAFI, University of Delaware, GEORGE LEONTARIS, University of Ioannina, NOBUCHIKA OKADA, University of Alabama — We describe how $\lambda\phi^4$ inflation with non-minimal coupling to gravity is realized in realistic supersymmetric $SO(10)$ models. In a well-motivated example the $16-\overline{16}$ Higgs multiplets, which break $SO(10)$ to $SU(5)$ and yield masses for the right handed neutrinos, provide the inflaton field ϕ. Thus, leptogenesis is a natural outcome in this class of SO(10) models. Moreover, the adjoint (45-plet) Higgs also acquires a GUT scale value during inflation so that the monopole problem is evaded. The scalar spectral index n_s is in good agreement with the observations and r, the tensor to scalar ratio, is predicted for realistic values of GUT paramters to lie close to 0.003.

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