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Electroweak monopoles and the electroweak phase transition

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We consider an isolated electroweak monopole solution within the Standard Model with a non-linear Born-Infeld extension of the hypercharge gauge field. Monopole (and dyon) solutions in such an extension are regular and their masses are predicted to be proportional to the Born-Infeld mass parameter. We argue that cosmological production of electroweak monopoles in a narrow mass range may delay the electroweak phase transition and make it more strongly first order while satisfying nucleosynthesis constraints.

Presentation type

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