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Liberating vector fields from their CMB anisotropy constraint

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The contribution of cosmological vector fields to the CMB is strongly constrained by the bound on the anisotropy parameter g , allowing a direction-dependent contribution only to a puny 0.2% level, thus establishing the global isotropy of the CMB to high precision. In this talk I present a scenario whereby a vector field, produced during inflation and free from ghost and perturbative instabilities, avoids this anisotropy constraint by imposing an observable direction-dependent perturbation on relatively small patches of the CMB only. I describe the scale-dependent statistical distribution of the curvature perturbation contributed by the vector field and discuss the naturalness of the setting and its implications.

Presenter: BUENO SANCHEZ, Juan Carlos (Universidad Antonio Narino, Colombia)

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