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Search or Article-id (Help | Advanced search) arXiv.org > astro-ph > arXiv:1107.2673 All papers Go! Ŧ Astrophysics > Cosmology and Extragalactic Astrophysics Download: PDF On the prior dependence of PostScript Other formats constraints on the tensor-to-scalar Current browse context: ratio astro-ph.CO < prev | next > new | recent | 1107 Marina Cortês, Andrew R. Liddle, David Parkinson Change to browse by: (Submitted on 13 Jul 2011 (v1), last revised 22 Sep 2011 (this version, v3)) astro-ph We investigate the prior dependence of constraints on cosmic tensor References & Citations perturbations. Commonly imposed is the strong prior of the single-field **INSPIRE HEP** inflationary consistency equation, relating the tensor spectral index nT to the (refers to | cited by) tensor-to-scalar ratio r. Dropping it leads to significantly different constraints NASA ADS on nT, with both positive and negative values allowed with comparable likelihood, and substantially increases the upper limit on r on scales k = 0.01 Bookmark(what is this?) Mpc^-1 to 0.05 Mpc^-1, by a factor of ten or more. Even if the consistency 📃 💿 🗶 💀 🖬 🔚 📲 🔛 🧐 equation is adopted, a uniform prior on r on one scale does not correspond to a uniform one on another; constraints therefore depend on the pivot scale chosen. We assess the size of this effect and determine the optimal scale for constraining the tensor amplitude, both with and without the consistency relation. Comments: 14 pages, 6 figures. v2: added references. v3: minor clarifications; added reference; matches version accepted by JCAP Subjects: Cosmology and Extragalactic Astrophysics (astroph.CO) Journal reference: JCAP 1109:027,2011

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