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DEMNUni: CMB-galaxy cross-correlation in the presence of massive neutrinos

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We present an analytical modelling of the cross-correlation between the total (linear and nonlinear) ISW/Rees-Sciama effect and the galaxy distribution, in the presence of massive neutrinos. The modelling has been compared against sky-maps of CMB and galaxies extracted from the "Dark Energy and Massive Neutrino Universe" (DEMNUni) N-body simulations. We found a significant difference, in the amplitude of the cross-spectrum and in the position of its characteristic sign inversion, as the neutrino mass varies. Our results represent a leap forward from previous modelling in literature, which could be useful to produce forecasts and, especially, to exploit future ISW/Ress-Sciama observations for inference of cosmological parameters, the neutrino mass in particular.

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