

CMB radiation in an inhomogeneous spherical space

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We analyse the CMB radiation in spherical 3-spaces with non-trivial topology. The focus is put on an inhomogeneous space which possesses observer dependent CMB properties. The suppression of the CMB anisotropies on large angular scales is analysed with respect to the position of the CMB observer. The equivalence of a lens space with a Platonic cubic space is shown and used for the harmonic analysis. We give the transformation of the CMB multipole radiation amplitude as a function of the position of the observer. General sum rules are obtained in terms of the squares of the expansion coefficients for invariant polynomials on the 3-sphere.

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