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Beaming cone of the Jovian decameter emission derived from different magnetic field models

Patrick Galopeau[1] and Mohammed Boudjada[2]
[1]LATMOS - CNRS, Guyancourt, France (patrick.galopeau@latmos.ipsl.fr)
[2]Space Research Institute, Austrian Academy of Sciences, Graz, Austria (mohammed.boudjada@oeaw.ac.at)

Five different Jupiter's magnetic field models (O6, VIP4, VIT4, VIPAL and JRM09) are used to investigate the angular distribution of the Jovian decameter radiation occurrence probability, relatively to the local magnetic field **B** and its gradient ∇B in the source region. The most recent model JRM09, proposed by Connerney et al. [*Geophys. Res. Lett.*, *45*, 2590-2596, 2018], and derived from Juno's first nine orbits observations, confirms the results obtained several years ago using older models (O6, VIP4, VIT4 and VIPAL): the radio emission is beamed in a hollow cone presenting a flattening in a specific direction. In this study, the same assumptions were made as in the previous ones: the Jovian decameter radiation is supposed to be produced by the cyclotron maser instability (CMI) in a plasma where **B** and ∇B are not parallel. The main result of our study is that the emission cone does not have any axial symmetry and then presents a flattening in a privileged direction. This flattening appears to be more important for the northern emission (34.8%) than for the southern emission (12.5%) probably due to the fact that the angle between the directions of **B** and ∇B is greater in the North (~10°) than in the South (~4°).