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Magnetic configuration in the Venus' induced magnetosphere

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The magnetic field data observed by Venus Express from April 2006 to December 2009 are analyzed in order to describe the magnetic configuration in the induced magnetosphere. All the magnetic observations are organized in a coordinate system which is determined by solar wind flow and the interplanetary magnetic field (IMF). The distribution of magnetic field vectors around Venus is given at solar minimum, and is compared with the previous results from PVO measurements at solar maximum. At low altitude the magnetic field has a tendency to encircle the planet. Moreover, the data are sorted into three groups by the angle between IMF and solar wind flow (IMF cone angle). The magnetic configuration around Venus under the different IMF orientations is displayed and the effect of IMF cone angle on the field draping is investigated. Only the transverse components of IMF can contribute to the field draping. When IMF is quasi-parallel to solar wind flow, Venus' ionosphere cannot block IMF to form the induced magnetosphere effectively. This is consistent with the result of case study.