

The Magnetic Field Topology in Galactic Winds

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The origin of the cosmic ray and of ultra high energy cosmic rays is one of the key points of interest in the scientific community. Considering the fact that the particles in the cosmic rays could be charged, if one wants to reconstruct the path from the source to us, he has to know the configuration of the medium and especially of magnetic fields in the interstellar environment. After we develop a model for the plasma flow in our Galaxy and for the configuration of magnetic fields in the magnetohydrodynamical approximation we are planning to apply this model to observations in order to better adjust the different initial conditions for the flow. The next steps will be to modify the characteristics of the flow in order to apply the model to different spiral galaxies and to extend this approach for the outflows in the early universe and off course there is the question of the nature of the dynamo in our Galaxy as a source for the galactic magnetic field with the outward cosmic rays being responsible for the $\alpha\omega$ -dynamo as discuss by Parker.