

# EXACT SOLUTIONS OF THE EINSTEIN-MAXWELL EQUATIONS FOR AXIALLY SYMMETRIC ASTRONOMICAL OBJECTS WITH MAGNETICALLY POLARIZED MATERIAL

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A family of solutions for the Einstein-Maxwell equations for compact axially symmetric and magnetically polarized objects is presented. The solutions are obtained by considering a seed solution which describes one of the metric functions and the magnetic potential vector in order to obtain a solution for the non vanishing Einstein equations. It is assumed that the source is made of an anisotropic non dissipative fluid and the magnetic polarization is proportional to the magnetic field due to the Maxwell equations. Once a solution for the system of equations is obtained, we determine the pressure and density which describes the content of matter of the model, as well as the border of the astronomical object. Similarly, we obtain the associated variables within the magnetic description of the object.

## Nivel de formación

Maestría

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