

## THEORETICAL STUDY OF MAGNETIC CORONAL ROTATION DEPENDENCE ON SOLAR ROTATION

This paper deals with the possibility of magnetic coronal rotation and its dependence on solar rotation. A study of green coronal rotation confirms that differential rotation degree varies symmetrically through a solar cycle 1. The coronal fields shows much less differential rotation than photosphere 2. The coronal magnetic fields shows similar features as coronal green lines. The differential rotation is highly symmetric with the coronal magnetic fields during sunspot minimum.

The complex structure of coronal magnetic fields shows some correlation to the solar rotation. But only in the innermost region of coronal magnetic fields shows full symmetry with solar cycles. There are three regions in coronal magnetic fields. The second and outermost region are not symmetric to solar cycles. Second region however shows very complex behavior due to its magnetic loop properties. Outermost being the least symmetric in all three.

These variations are due to various vectors involved in coronal magnetic fields such as energy densities, dipole moment etc. Apparently these layers shows a pattern of variation of densities. Least dense layer being least symmetric and vice-versa.

Anomalous middle layer shows its peculiar behavior due to magnetic loop formation in it.

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