[IM18] Grain Alignment and Polarized Emission from Magnetized T Tauri Disks

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The structure of magnetic fields within protostellar disks may be studied via polarimetry provided that grains are aligned in respect to magnetic field within the disks. We explore alignment of dust grains by radiative torque in T Tauri disks and provide predictions for polarized emission for disks viewed at different wavelengths and viewing angles. We show that the alignment is especially efficient in outer part of the disks. In the presence of magnetic field, these aligned grains produce polarized emission in infrared wavelengths. We consider a simple model of an accretion disk and provide predictions for polarization that should be available to both instruments that do not resolve the disks and future instruments that will resolve the disks. As the surface magnetic field and the bulk magnetic field play different roles for the disk dynamics, we consider separately the contributions that arises from the surface areas of the disk and its interior. We find that the polarized emission drops for wavelengths shorter than 10mm. Between 10mm and 100mm, the polarized emission is dominated by the emission from the surface layer of the disks and the degree of polarization can be as large as 10% for unresolved disks. The degree of polarization is around 2-3 % level at wavelengths larger than 100mm.

[IM19] FIMS Observations of the Monoceros loop SNR region

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We present far ultraviolet emission spectra and maps of the Monoceros loop SNR region, observed with Far-ultraviolet Imaging Spectrograph (FIMS) onboard the first Korean scientific satellite STSAT-1. This region includes a star cluster, NGC 2264 and the Rosette Nebula, with the Monoceros SNR between them. Their morphology appears well in H-alpha map. We anticipate that the spatial variations of FUV emission lines like C IV(λλ1548, 1550 Å) doublet is associated with their structure.