Solar Neutrino Detection Technology As a Probe to the Inner Structure of Heavenly Body

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Neutrinos are universal particles emitted from stars and especially our sun emits the solar neutrinos radially outwards like a point radiation source. The neutrinos have three flavors (electron, mu and tau), which act like three colored lights for imaging. Neutrino tomography for the heavenly body, which is very challenging, is just being devised for the study of inner structure of our earth and moon. For the detection of the solar neutrinos, the p-type point contact germanium detector seems to be most promising sensor based on the neutrino-nuclear coherent scattering. The recoiling germanium atom gives its kinetic energy ranged from 10 to 100 eV to the sensor material, which informs us the energy and the flavor of the detected neutrino to reconstruct the inner structure of the heavenly body. The theoretical study of this idea is underway to calculate and expect the attenuated and oscillated solar neutrino intensities during the penetration into the massive moon medium based on the MSW theory.