HAO Colloquium Series

(Refreshments served)

Speaker: **Nobumitsu Yokoi,**
Institute of Industrial Science, University of Tokyo

Time: **1:30–2:30 pm**

Date: **Wednesday, September 5, 2012**

Location: **CG1-1210, South Auditorium**

Title: **Cross helicity and related dynamo**

Abstract:

The turbulent cross helicity (velocity--magnetic-field correlation in turbulence) coupled with the large-scale vortical motion leads to the turbulent electromotive force aligned with the mean vorticity. This is called the cross-helicity effect in magnetic-field induction, and is in remarkable contrast with the well-known helicity or alpha effect, where the induced electromotive force is aligned with the mean magnetic field. The cross-helicity effect has been investigated in several astro/ geophysical and fusion plasma phenomena. Some important features of the cross-helicity dynamo will be presented with introducing some illustrative applications to astro/geophysical and fusion plasma phenomena, which include the solar dynamo, large-scale magnetic fields in galaxies, spontaneous plasma rotation in some improved confinement modes in fusion tokamaks, etc.