

# Study of chemical evolution using circularly polarized Synchrotron Radiation

# Kazumichi Nakagawa[1]

[1] Fac Human Develop. Kobe Univ.

Using evaporated films of amino acids, we successfully measured Natural Circular Dichroism NCD in soft X-ray region at the first time. Experiment was carried out at the beamline BL23SU at the SPring-8. Switching the polarizing undulator with 0.1 Hz, we detected the difference in absorption for left and right circularly polarized light. Observed spectra was not so different from the calculation by the group of H. Agren in Sweden.

We measured CD spectra of Alanine films at the polarizing undulator beamline at the TERAS, AIST-Tsukuba. Switching the helicity of light with 2 Hz, we succeeded to measure CD spectra even up to 130 nm. Next challenge will be done below 100 nm.

We observed asymmetric decomposition in alanine films irradiated by 180 nm light with almost 1 mW. 1.5 % of enantiomeric excess was observed after  $10^{17}$  photons.

We will discuss about a possible story of chemical evolution in space.