
ID de Contribution: **413** Type: **Contribution orale**

# Condensation Effects on Electron Chiral Asymmetries in the Photoionization of Serine

*mercredi 5 juillet 2023 10:10 (20 minutes)*

Structural changes at the molecular level, occurring at the onset of condensation, can be probed by angle-resolved valence photoelectron spectroscopy, which is inherently sensitive to the electronic structure. For larger condensed systems like aerosol particles, the observation of intrinsic angular anisotropies in photoemission (β parameters) is challenging due to the strong reduction of their magnitude by electron transport effects. Here, I will introduce a less common, more sensitive observable in the form of the chiral asymmetry parameter to perform a comparative study of the VUV photoelectron spectroscopy and photoelectron circular dichroism (PECD) between pure gas phase enantiomers of the amino acid serine and their corresponding homochiral nanoparticles. I will show how a relatively large (1%) and strongly kinetic energy-dependent asymmetry might be rationalised in terms of the emergence of local order and conformational changes potentially counterbalancing the loss of angular information due to electron transport scattering. This demonstrates the potential of PECD as a sensitive probe of the condensation effects from the gas phase to bulk-like chiral aerosol particles surpassing the potential of conventional photoemission observables such as the anisotropy parameter.

## Affiliation de l'auteur principal

Synchrotron SOLEIL

**Auteur principal:** GARCIA-MACIAS, Gustavo (Synchrotron SOLEIL)

**Co-auteurs:** Dr HARTWEG, Sebastian (University of Freiburg); Dr BOZANIC, Dusan (Vinča Institute of Nuclear Sciences); NAHON, Laurent

**Orateur:** GARCIA-MACIAS, Gustavo (Synchrotron SOLEIL)

**Classification de Session:** Mini-colloques: MC14 Sources de photons sur accélérateurs pour l'étude des biomolécules en phase gazeuse

**Classification de thématique:** MC14 Sources de photons sur accélérateurs pour l'étude des biomolécules en phase gazeuse