

**Seminarium Studium Doktoranckiego NCBJ**  
**Thursday, 31 October, 9:00**  
**Sala 404 w NCBJ, Pasteura 7**

**Speaker: Ubaldo Cavazos (Studium Doktoranckie NCBJ)**

**Title: Four-generation CKM matrix**

**Abstract:**

Despite the accuracy in its description of the spectra and interactions of elementary particles, the Standard Model (SM) has some open problems to be solved, such as the origin of the masses, the neutrino oscillations, etc., which requires a study of its extension. One of the extensions is to consider a fourth generation of quarks and leptons. In such a case, the Cabibbo-Kobayashi-Maskawa (CKM) matrix is a  $4 \times 4$  unitary matrix. In this presentation, we summarize a general discussion for the four generations CKM matrix properties, which includes the parametrization, new rephasing invariants, and an appropriate Jarlskog condition for CP conservation.