



# CERN Joint EP/PP Seminars

SPEAKER: Marcella Bona (Conseil European Recherche Nucl. (CERN))  
TITLE: **Measurements of the Unitarity Triangle angles at the B factories**  
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## ABSTRACT

With the advent of the asymmetric B factories, Belle and BaBar, the CP violation in the B sector has been firmly established, the  $\sin 2\alpha$  measurement being now a precision measurement at the % level. B factories have accumulated an impressive statistics and this gives enormous possibilities for exploring also the other angles of the Unitarity Triangle. A review of the current experimental status and perspectives on the measurements of the Unitarity Triangle angles will be given: we will start with the by-now benchmark extraction of the  $\alpha$  value in charmonium final states, assessing possible theory contributions to the SM prediction. Then we will discuss the determination of the phase of the CKM matrix through the study of  $b \rightarrow c$  and  $b \rightarrow u$  transitions in (NP free) B decays to charmed mesons. Finally we will address the (NP sensitive) charmless  $b \rightarrow d$  and  $b \rightarrow s$  decays, focusing on the  $B^0$  measurements related to alpha angle. A final glance at the state of the art in the flavour sector of the SM (and beyond) will be given.