



EINLADUNG

im Rahmen des Teilchenphysikseminars

zum Vortrag von

Bernat CAPDEVILA

(University of Cambridge, University of Barcelona)

über

“Inclusive semileptonic B-meson decays and CKM matrix determinations: challenges and theoretical framework(s)”

Abstract:

The CKM matrix is a key ingredient in the study of CP violation and in New Physics searches within the flavour sector. Therefore, precise determinations of its matrix elements are of utmost importance. $|V_{ub}|$ and $|V_{cb}|$ can be extracted from both exclusive semileptonic $b \rightarrow u$ and $b \rightarrow c$ decays and the inclusive channels $B \rightarrow Xu \ell \nu$ and $B \rightarrow Xc \ell \nu$. Exclusive and inclusive determinations of these matrix elements have been in tension for a long time, with even different theoretical frameworks not agreeing well with one another. In this seminar, I am going to review some of the techniques employed in the study of inclusive semileptonic B-meson decays and present the results of our latest inclusive determination of $|V_{cb}|$. Then, I will discuss the challenges one needs to face in order to obtain a solid description for $B \rightarrow Xu \ell \nu$ and some of the solutions proposed. Finally, I will present the first calculation of power-suppressed perturbative corrections in $B \rightarrow Xu \ell \nu$ and show the first preliminary results of our determination of the necessary non-perturbative functions within a neural network approach.

Zeit: Dienstag, 23.4.2024, 16:15h

Ort: Erwin-Schrödinger-Hörsaal, Boltzmannngasse 5, 5. Stock

Join Zoom Meeting - Meeting ID: 933 4269 3866 Passcode: 185096
<https://univiennea.zoom.us/j/93342693866?pwd=aUpTR0VJNUhJY2Q0ajdaKzI1YWVBR09>