



Contribution ID: 393

Type: **Talk**

☒318☒ Measuring $\mathcal{B}(B^0 \rightarrow K^{*0} \tau^+ \tau^-)$ via the double-loop process $B^0 \rightarrow K^{*0} \tau^+ \tau^- (\rightarrow \mu^+ \mu^-)$

Tuesday, August 31, 2021 6:30 PM (15 minutes)

Recent measurements of B -meson decays show a consistent pattern of tensions between measured observables and Standard Model (SM) predictions. These tensions are referred to as the flavour anomalies. To understand the source of these anomalies, measurements of $b \rightarrow s \tau^+ \tau^-$ processes are paramount, as many New Physics explanations favour enhancements in this mode. Of particular interest is the decay $B^0 \rightarrow K^{*0} \tau^+ \tau^-$. Reconstructing tau final states is however challenging and no measurement of $\mathcal{B}(B^0 \rightarrow K^{*0} \tau^+ \tau^-)$ has been made to date. This talk/poster outlines a novel approach to measuring $\mathcal{B}(B^0 \rightarrow K^{*0} \tau^+ \tau^-)$ via the non-local double-loop process $B^0 \rightarrow K^{*0} \tau^+ \tau^- (\rightarrow \mu^+ \mu^-)$. The analysis strategy is outlined, including the expected sensitivities to $\mathcal{B}(B^0 \rightarrow K^{*0} \tau^+ \tau^-)$ using this approach.

Primary authors: ANDERSSON, Martin (Universitaet Zuerich (CH)); OWEN, Patrick Haworth (Universitaet Zuerich (CH)); SMITH, Eluned Anne (Rheinisch Westfaelische Tech. Hoch. (DE))

Presenter: ANDERSSON, Martin (Universitaet Zuerich (CH))

Session Classification: Nuclear, Particle- & Astrophysics

Track Classification: Nuclear, Particle- and Astrophysics (FAKT - TASK)