Update on the angular analysis of the $B^0 \to K^{*0} e^+ e^-$ decay

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The family of decays mediated by $b \to s\ell^+\ell^-$ transitions ($\ell = \mu, e$) provides a rich laboratory to search for effects of physics beyond the Standard Model. In recent years, LHCb has found hints of deviations from theoretical predictions in branching fraction ratios (*i.e.* R_K and R_K^* [1], [2]) that hint at the violation of lepton flavour universality (LFU). Anomalous behaviour in the angular distribution of the muon mode, $B^0 \to K^{*0}\mu^+\mu^-$, has also been seen, notably in one of the observables with reduced theoretical uncertainties, P_5' [3] . Meanwhile, Belle has completed the first investigation into LFU for angular distributions, the results of which show tension with the Standard Model, but remain inconclusive [4]. In this talk, I will provide the latest update on the ongoing angular analysis of $B^0 \to K^{*0}e^+e^-$ decays at the LHCb.

[1] Roel Aaij et al. Search for lepton-universality violation in $B^+ \to K^+\ell^+\ell^-$ decays. *Phys. Rev. Lett.*, 122(19):191801, 2019.

[2] R. Aaij et al. Test of lepton universality with $B^0 \to K^{*0}\ell^+\ell^-$ decays. *JHEP*, 08:055, 2017.

[3] Roel Aaij et al. Angular analysis of the $B^0 \to K^{*0}\mu^+\mu^-$ decay using 3 fb^{-1} of integrated luminosity. *JHEP*, 02:104, 2016.

[4] S. Wehle et al. Lepton-Flavor-Dependent Angular Analysis of $B \to K^*\ell^+\ell^-$. *Phys. Rev. Lett.*, 118:111801, Mar 2017.