



PPD Seminar

Charmless $B \rightarrow VV$ decays: $B^0(s) \rightarrow \text{ph}\phi\text{ph}\phi$

Mary Richardson-Slipper

29 Jul 2026, 11:30

R61 CR03 (RAL)

Charmless $P \rightarrow VV$ decays are a class of decays that provide interesting probes of the Standard Model. Studies of these modes can test for CP violation beyond the Standard Model and measurements of their decay amplitudes highlight a problem known as the polarisation puzzle. This talk introduces the LHCb experiment, CP violation in the Standard Model and how it may be probed with the decay $B_s \rightarrow \text{ph}\phi\text{ph}\phi$. The mode $B^0 \rightarrow \text{ph}\phi\text{ph}\phi$ is also susceptible to physics beyond the Standard Model which may enhance its branching fraction. The latest results for these modes from LHCb are presented, including a new result for the search for the $B^0 \rightarrow \text{ph}\phi\text{ph}\phi$ mode which is currently unobserved. New techniques used to improve the sensitivity of this search are also detailed.

