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Charmless B->VV decays

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A charmless $B \to VV$ decay consists of a B-meson to two spin-one vector decay with a four hadron final state. The decay amplitude for a given $B \to VV$ decay is described by a basis of three amplitudes, where a particiular interest in these decays stems from the expected hierarchy in these vector-vector amplitudes being violated for modes involving penguin decays (this is often referred to as a 'polarisation puzzle').

Using the full Run 1 and Run 2 LHCb collision data set studies are on-going to provide both precision branching fraction measurements and, through amplitude analysis, measurements of the CP-average and CP-asymmetry of the amplitudes and polarisation variables for these decays.

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