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# Reducing Penguin Pollution

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The decay  $B_s \rightarrow J/\psi \phi$  is used for measuring  $2\beta_s$ , the phase of  $B_s$ - $B_s^*$  mixing. The amplitude for this decay is dominated by the colour-suppressed tree diagram, but also contains “penguin pollution” (PP) due to gluonic and electroweak penguin diagrams. The PP leads to a theoretical error in the extraction of  $2\beta_s$  from the data. In the SM, it is estimated that the PP is negligible, but there is some uncertainty as to its exact size. Now, the measured value of  $2\beta_s$  is small, in agreement with the SM, but still has significant experimental errors. When these are reduced, if one hopes to be able to see clear evidence of new physics, it is crucial to have the theoretical error under control. In this talk, I describe how a modification of the angular analysis currently used to measure  $2\beta_s$  in  $B_s \rightarrow J/\psi \phi$  can be used to reduce the theoretical error due to PP.

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