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First measurement of the CP-violating phase in hadronic Bs -> phi phi decays

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A first measurement of the time-dependent CP-violating asymmetry in hadronic B_s ⟶ φφ decays is presented. In this decay channel, the CP -violating weak phase arises due to CP violation in the interference between B_s − bar{B}_s mixing and the b ⟶ s bar{s} s hadronic penguin decay amplitude. Using a sample of 1.0 fbˆ−1 of pp collision data collected at a centre-of mass energy of sqrt{s}=7 TeV with the LHCb detector, 880 ± 31 B_s ⟶ φφ signal decays are extracted. Using this sample, the phase is measured to be in the interval [−2.46, −0.76] rad at 68% confidence level. The p-value of the Standard Model hypothesis is 16%.

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