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# Searching for new physics using CP conserving and CP violating Bs mixing parameters at Dzero

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We present measurements of the three Bs mixing parameters: the mass and width difference between the heavy and light mass eigenstates, Delta M_s and Delta Gamma_s respectively, and the CP violating phase difference between Delta M_s and Delta Gamma_s, phi_s. The results are based on a large data set of proton-antiproton collisions recorded by the Dzero detector operating at the Fermilab Tevatron Collider. The three mixing parameters are extracted from several analyses of both time dependent and time independent samples of Bs decays to flavor specific states such as Ds mu nu and CP eigenstates such as J/psi phi or Ds()*Ds*(). The Delta M_s measurement can be used primarily to limit the magnitude of new physics contributions from Delta Bs = 2 operators while the combination of the Delta Gamma_s and phi_s measurements can be used to limit the phase of these operators.

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