



SPEAKER: Alexey Drutskoy (Lebedev Physical Institute of the Russian Academy of Sciences, Moscow)

TITLE: **Observation of a new $B_s \pi$ state**

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PLACE: Main Auditorium

ABSTRACT

We report the observation of a narrow structure, $X(5568)$, in the decay sequence $X(5568) \rightarrow B_s \pi^\pm$, $B_s \rightarrow J/\psi \phi$, $J/\psi \rightarrow \mu^+ \mu^-$, $\phi \rightarrow K^+ K^-$. This is the first observation of a hadronic state with valence quarks of four different flavors. The mass and natural width of the new state are measured to be $m = 5567.8 \pm 2.9$ (stat) $+0.9-1.9$ (syst) MeV and $\Gamma = 21.9 \pm 6.4$ (stat) $+5.0-2.5$ (syst) MeV, and the significance including look-elsewhere effect and systematic uncertainties is 5.1σ . The observation is based on 10.4 fb^{-1} of $p\bar{p}$ collision data at 1.96 TeV collected by the D0 experiment at the Fermilab Tevatron collider.