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Observation of the first hidden-charm strange tetraquark at BESIII

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In the last ten years, a whole set of new particles not fitting in the constituent quark model has populated the mass region above the open-charm threshold. The spectrometer BESIII, installed at the Beijing Electron Positron Collider II, can access these states in electron-positron annihilations both by production and by direct formation. It has collected a large dataset at different center-of-mass energies. In this talk, the discovery of the first hidden-charm strange tetraquark with a mass of $3.98 \text{ GeV}/c^2$ will be addressed. The resonance was observed in the analysis of data collected at five center-of-mass energy points in the range $[4.628, 4.698] \text{ GeV}$, with a total integrated luminosity of 3.7 fb^{-1} . Due to its properties, the $Z_{cs}(3985)$ is a strong candidate for the predicted open-strange charmonium-like tetraquark with the minimal structure $c\bar{c}b\bar{s}$.

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