## Λ<sup>0</sup> vertex radial distance K<sub>S</sub><sup>0</sup> vertex radial distance number of vertices simulation uncertainty number of vertices simulation uncertainty observed observed 10<sup>5</sup> 10<sup>3</sup> 10<sup>4</sup> $10^{2}$ paid/sq0 0.75 0.50 7.50 9.75 9.75 0.75 0.50 5 10 10 5 radial distance (cm) radial distance (cm) number of reconstructed vertices number of reconstructed vertices vertices 120 vertices 200 0.00 < \_KsRPV < 0.50 0.50 < \_KsRPV < 1.50 0.50 < \_LaRPV < 1.50 0.00 < \_LaRPV < 0.50 data PDG Kg mass: PDG K<sub>S</sub> mass: PDG A<sup>0</sup> mass: PDG A<sup>0</sup> mass: ---- background fit 20 ---- background fit background fit ---- background fit 497.614 ± 0.024 MeV 497.614 ± 0.024 MeV f reconstructed v 1115.683 ± 0.006 MeV 1115.683 ± 0.006 MeV number of reconstructed 100 15 € 300 number 500 10 100 20 0.52 0.54 0.56 invariant mass (GeV) 0.52 0.54 0.56 invariant mass (GeV) 0.48 0.5 1.12 1.13 1.14 invariant mass (GeV) 0.46 0.48 0.5 0.46 1.09 1.11 1.09 1.11 1.12 1.13 1.14 invariant mass (GeV) 1.1 1.1