

### Event-plane determination with the new ALICE FIT detector

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### Run 2 $\rightarrow$ Run 3



• Run 3: Fast Interaction Trigger (FIT)



VZERO and FIT drawn at the same scale, please notice the significant increase in the size of FV0 scintillator ring

#### • Run 2: VZERO



# Event-plane in heavy-ion collisions

ALICE Fast

- The reaction plane (RP) of the collision = plane determined by the beam axis and the impact parameter
- Cannot be determined precisely
  - → estimation from final particle spectra called the event plane (EP)





- \* The event-plane resolution measures the difference between RP and EP
- \* The resolution is affected by the multiplicity of the event, secondary particles, and detector effects

## **Event-plane resolution of FIT**



R<sub>2</sub> (=event-plane resolution) simulated previously at 2.76 TeV



<sup>•</sup> FIT event-plane resolution for Run 3 is being studied via simulations at 5.5 TeV

- Heavy-ion collisions are generated using the AMPT\* model
- With this model particles from the collisions are transported through the detector geometry implemented in O<sup>2</sup> that is the ALICE simulation and analysis software for Run 3
- These simulated detector signals give a realistic estimation of how FIT would perform in the future

\*A Multi-Phase Transport model