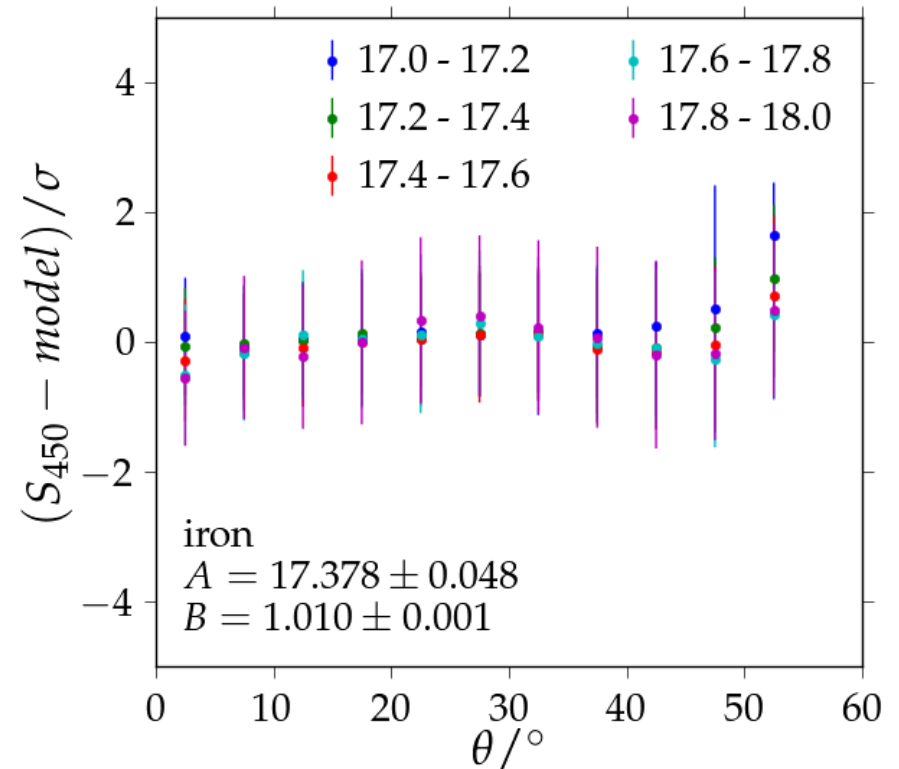
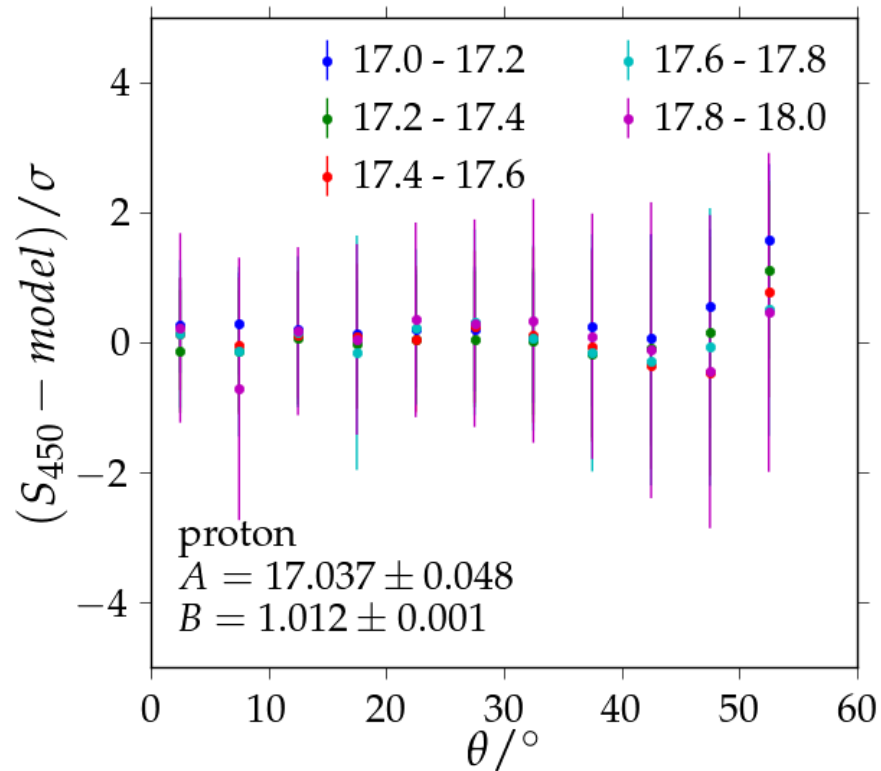


MC calibration with Lyon showers

~140000 showers, 50 % proton, 50 % iron
cuts to get full SD efficiency: $E > 10^{17.6}$ eV, $\theta < 55^\circ$



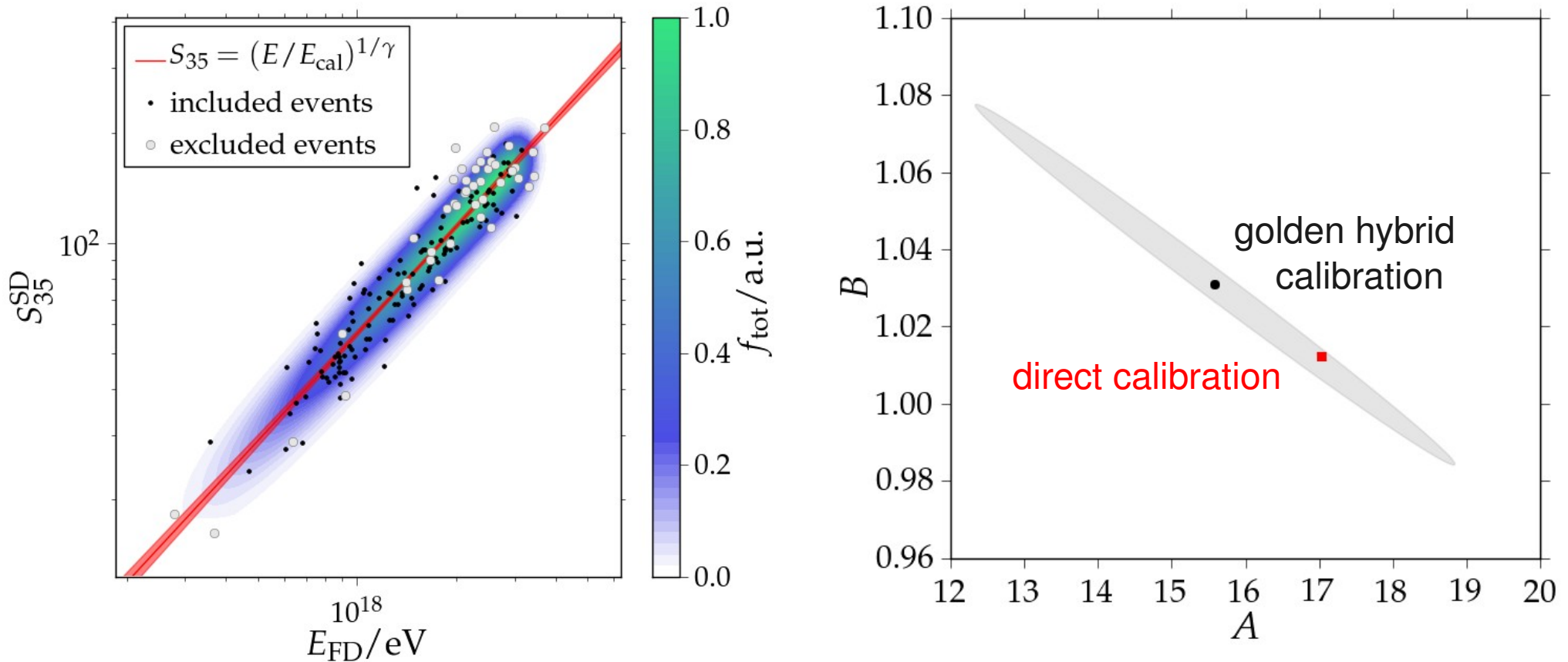
Direct fit of S450 to MC energy

$$S_{450}(E, \theta) = \left(\frac{E}{A \times 10^{15} \text{eV}} \right)^{1/B} (1 + ax(\theta) + bx(\theta)^2)$$

$$x = \cos(\theta)^2 - \cos(35^\circ)^2$$

MC calibration with golden hybrids

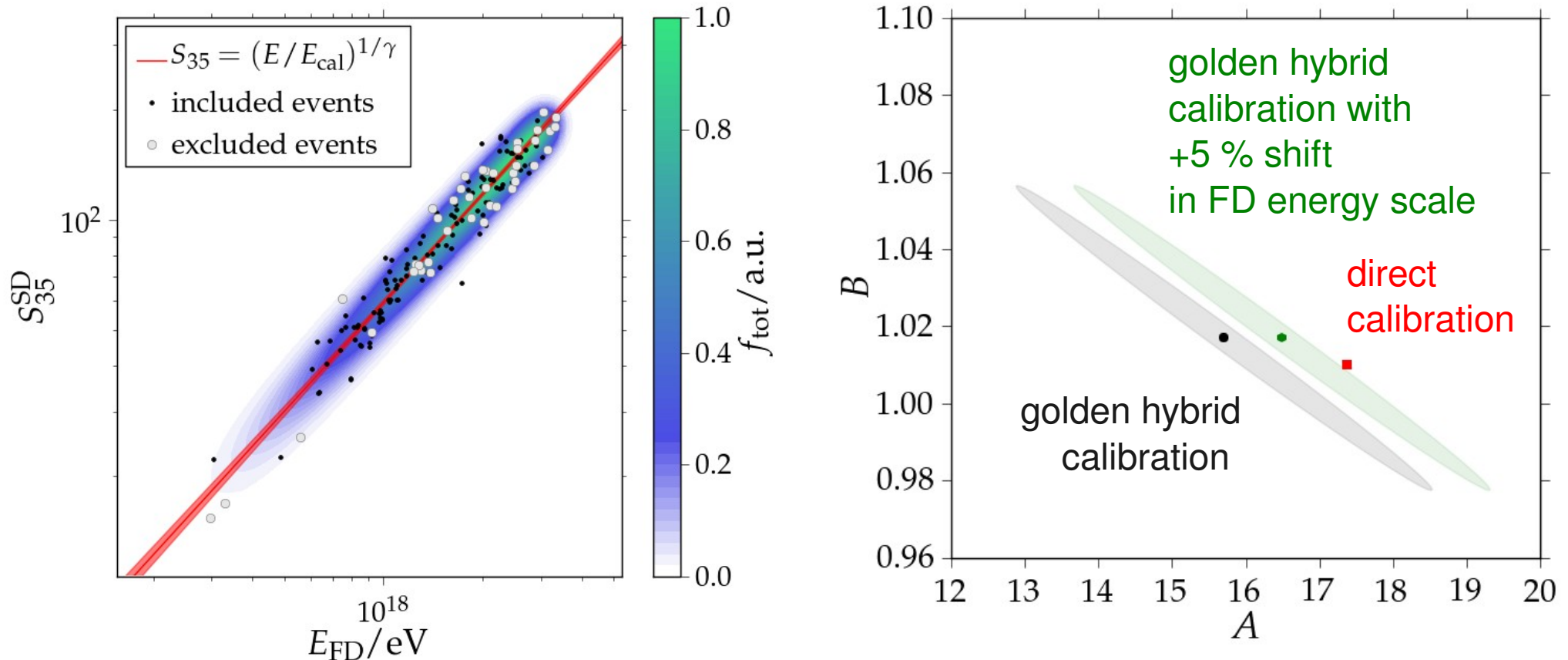
protons, 135 events after cuts established by Ioana in Santiago Meeting 2011



Now use standard energy calibration fit on simulated golden hybrid sample
→ validates energy calibration and golden hybrid selection
→ **results are compatible!**

MC calibration with golden hybrids

iron, 123 events after cuts established by Ioana in Santiago Meeting 2011



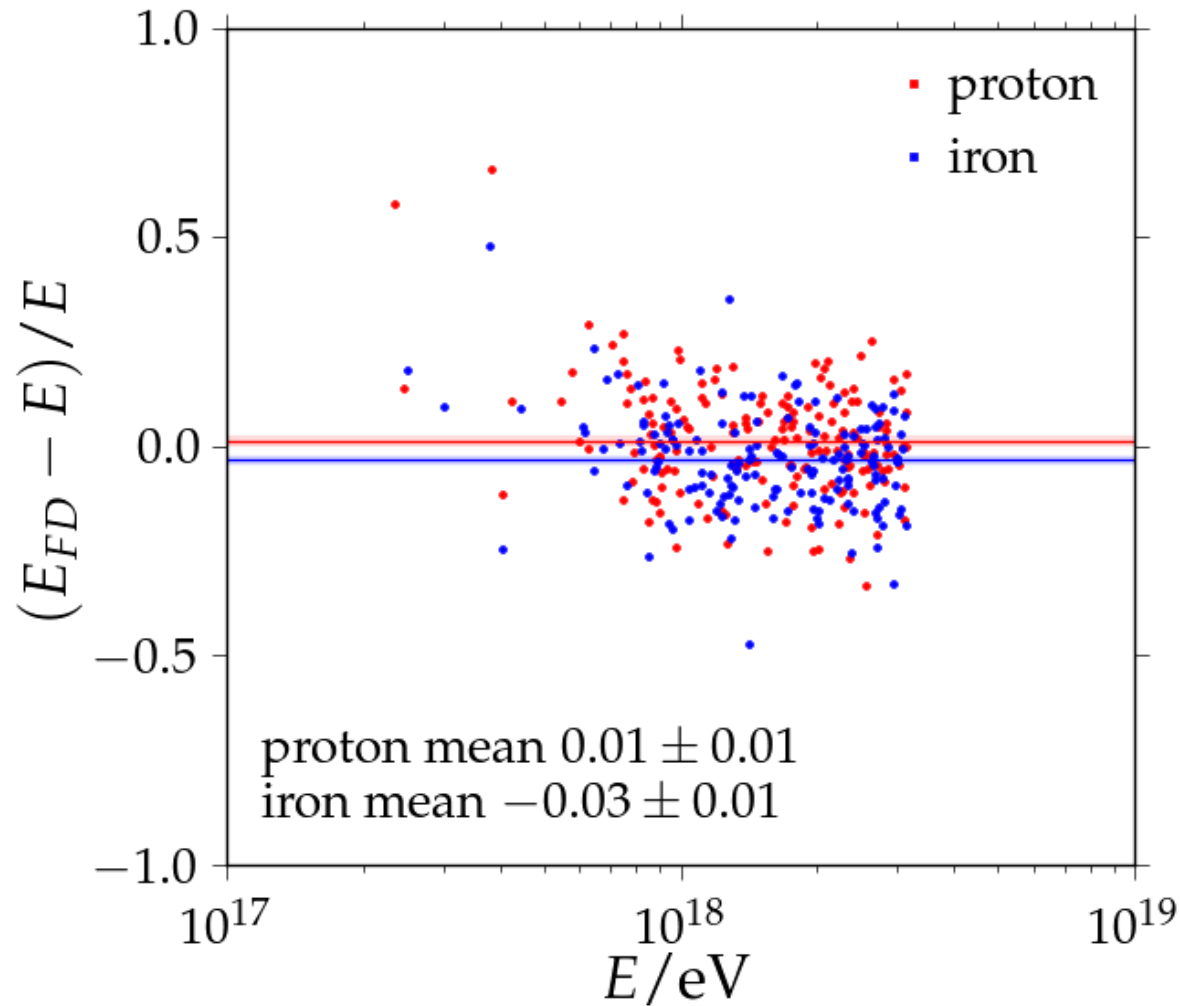
Now use standard energy calibration fit on simulated golden hybrid sample

→ validates energy calibration and golden hybrid selection

→ results not compatible, but could be caused by mismatch in invisible energy correction

FD energy vs. MC energy

selected golden hybrid data set



LSQ vs. ML in FD reconstruction

