

Updates on the Infill energy spectrum

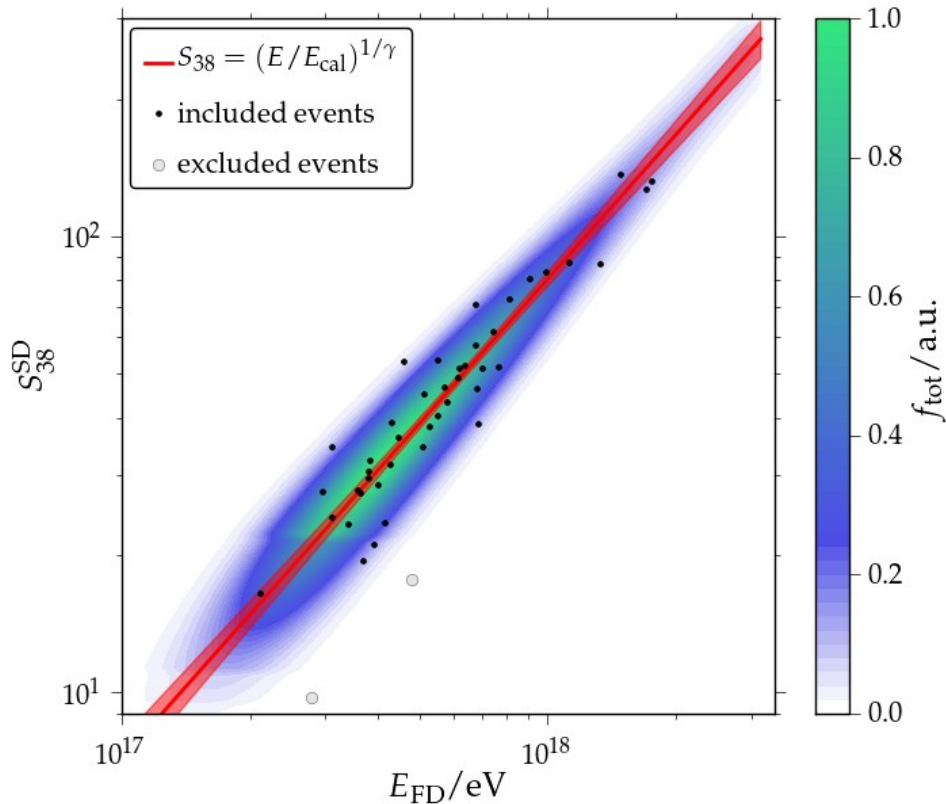
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Updates on the energy spectrum obtained with SD Infill data using maximum-likelihood FD profile reconstruction and maximum-likelihood energy calibration.

Energy calibration

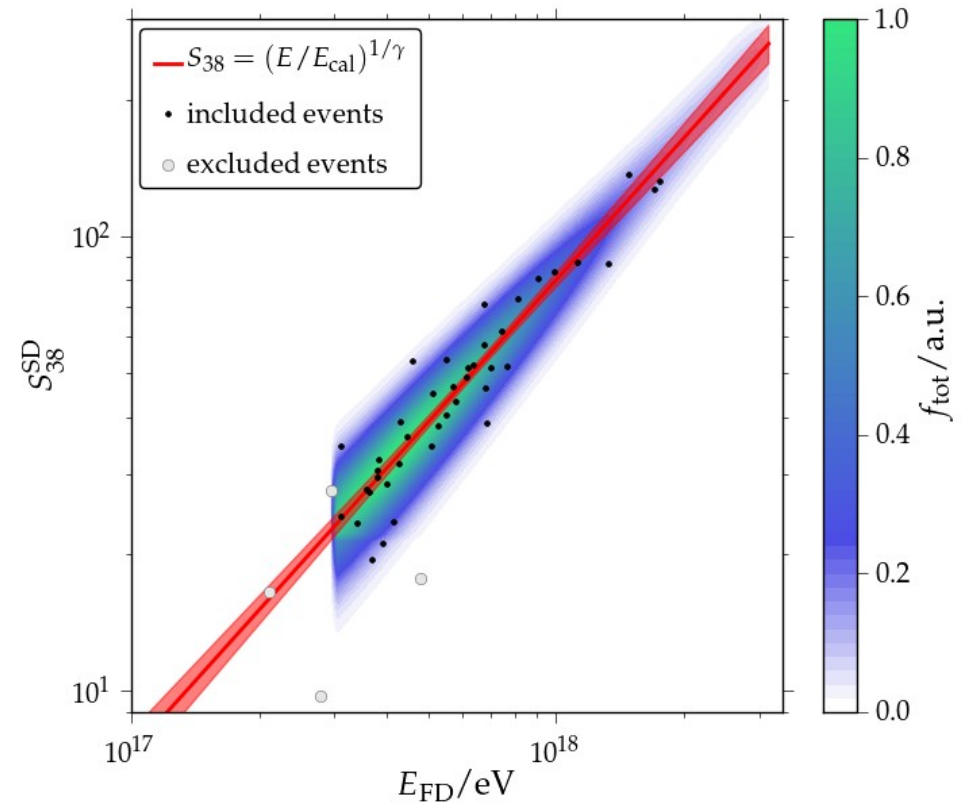
using maximum-likelihood FD profile reconstruction

without FD energy cut



$$E_{cal} = (15.4 \pm 3.07) \text{ e15 } [\pm 19.87 \%]$$
$$\gamma = 0.95 \pm 0.05 [\pm 5.34 \%]$$

with FD energy cut at $3\text{e}17$ eV

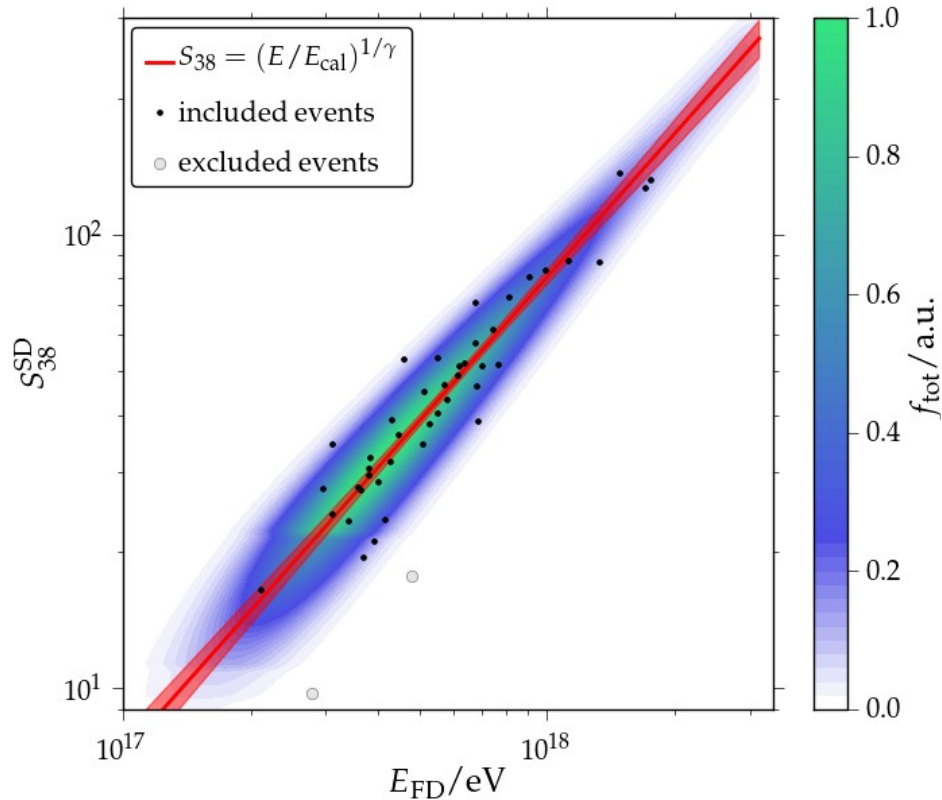


$$E_{cal} = (14.7 \pm 3.11) \text{ e15 } [\pm 21.17 \%]$$
$$\gamma = 0.96 \pm 0.05 [\pm 5.59 \%]$$

Energy calibration

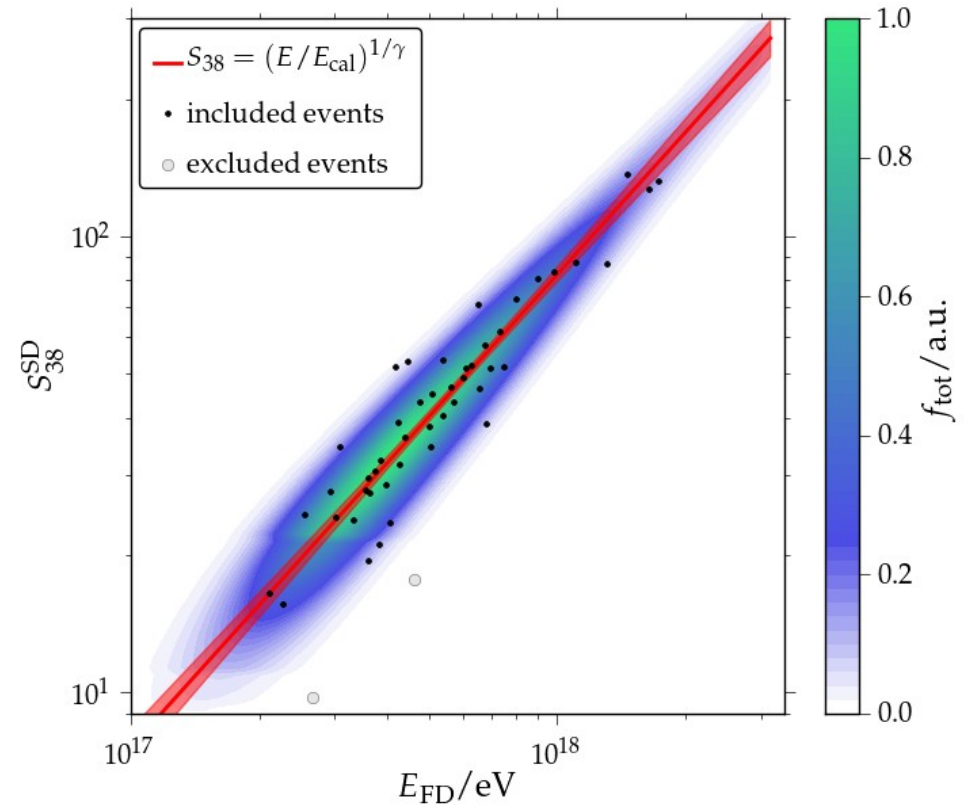
comparison with old FD profile reconstruction (χ^2)

Maximum-likelihood



$$E_{cal} = (15.4 \pm 3.07) \text{ e15 } [\pm 19.87 \%]$$
$$\gamma = 0.95 \pm 0.05 [\pm 5.34 \%]$$

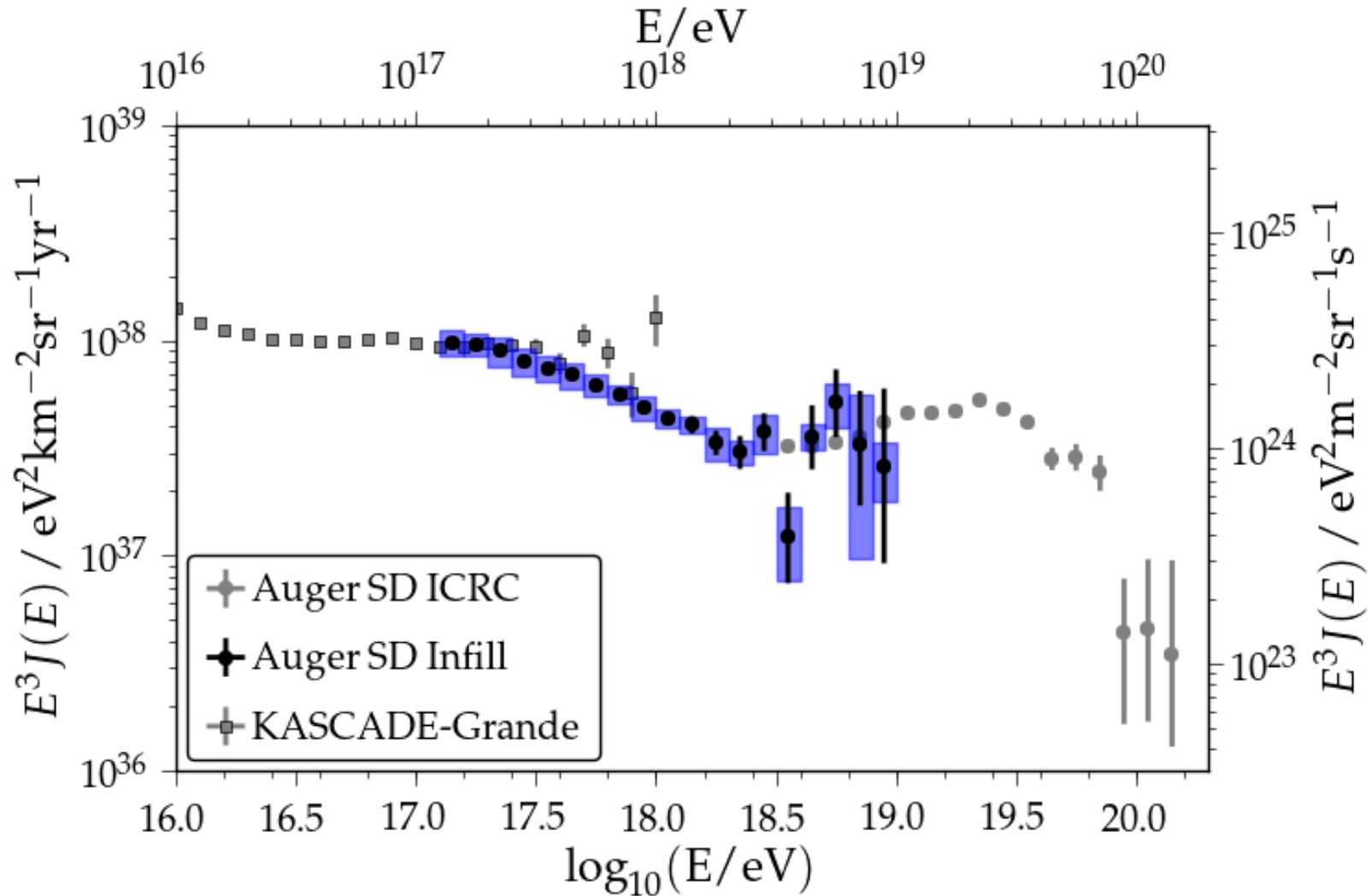
chi-square



$$E_{cal} = (14.16 \pm 2.7) \text{ e15 } [\pm 19.03 \%]$$
$$\gamma = 0.96 \pm 0.05 [\pm 5.07 \%]$$

Energy spectrum

using maximum-likelihood FD reconstruction



Blue errorboxes show the monte-carlo propagated calibration uncertainty!

Energy spectrum

using maximum-likelihood FD reco with energy cut

