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Event-by-Event Fission Modeling of Prompt Neutrons and Photons from Neutron-Induced and Spontaneous Fission with `FREYA`[1] RAMONA VOGT, LLNL and UC Davis, JORGEN RANDRUP, LBNL — The event-by-event fission Monte Carlo code `FREYA` (Fission Reaction Event Yield Algorithm) generates large samples of complete fission events. Using `FREYA`, it is possible to obtain the fission products as well as the prompt neutrons and photons emitted during the fission process, all with complete kinematic information. We can therefore extract any desired correlation observables. Concentrating on ^{239}Pu(n,f), ^{240}Pu(sf) and ^{252}Cf(sf), we compare our `FREYA` results with available data on prompt neutron and photon emission and present predictions for novel fission observables that could be measured with modern detectors.

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