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Backgrounds in XENON1T

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Backgrounds in XENON1T

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Propositions:

1. An experiment called "XENON1T" should have a fiducial volume of 1 tonne.

2. Despite the 222-radon concentration being higher than expected, the ultra-low background goals of XENON1T were achieved.

3. The best defense against introducing a human bias is not only blinding the data, but applying an analysis so complex that the results are unsusceptible for human input.

4. The biggest challenge in the up-scaling of an experiment is not the experiment itself, but in up-scaling the management structure in such a way that PhD students get recognition.

5. Why do we call signals from radon 'a background', when it gives the most prominent signals in the detector?

6. In contrary to expectations, in XENON1T the goals were exceeded in to discriminate background from signal events, even when the drift field strength had to be decreased by about 90%.

7. No programming language is superior to another, some are just way more fun to work with.

8. Neutrinos from solar flares (or neutron star mergers) do not influence the decay rate of beta-emitters.

9. (ADC) saturation of high energy signals is problematic, except when you work around them.

10. XENONnT will find dark matter, and if not, then the next generation of detectors will. Still, it does not hurt to diversify in experimental searches.