

Handling excessive data rates of DREAM

Current and Future data rates

- Modern powder TOF diffractometers generates large amount of data, which needs to be reduced quickly
- Requirement: data reduction shall be faster than the average measuring time (at DREAM 10-15 min)
- Today NOMAD@SNS (4 sr, 1.1MW) generates **760 000 n/s** for high scattering sample in complex SE (Co_3O_4 in Orange cryostat)
- Day one DREAM: (1.8 sr, 2MW): ~ **10 000 000 n/s**
- Full Scope DREAM (5.2 sr, 5MW): ~ **75 000 000 n/s**

Situation today

The record at SNS is so far 5 000 000 n/s (VISION). That created problems with translational service

Even at the first day of operation DREAM will exceed the highest count rate detected at SNS by factor of 2