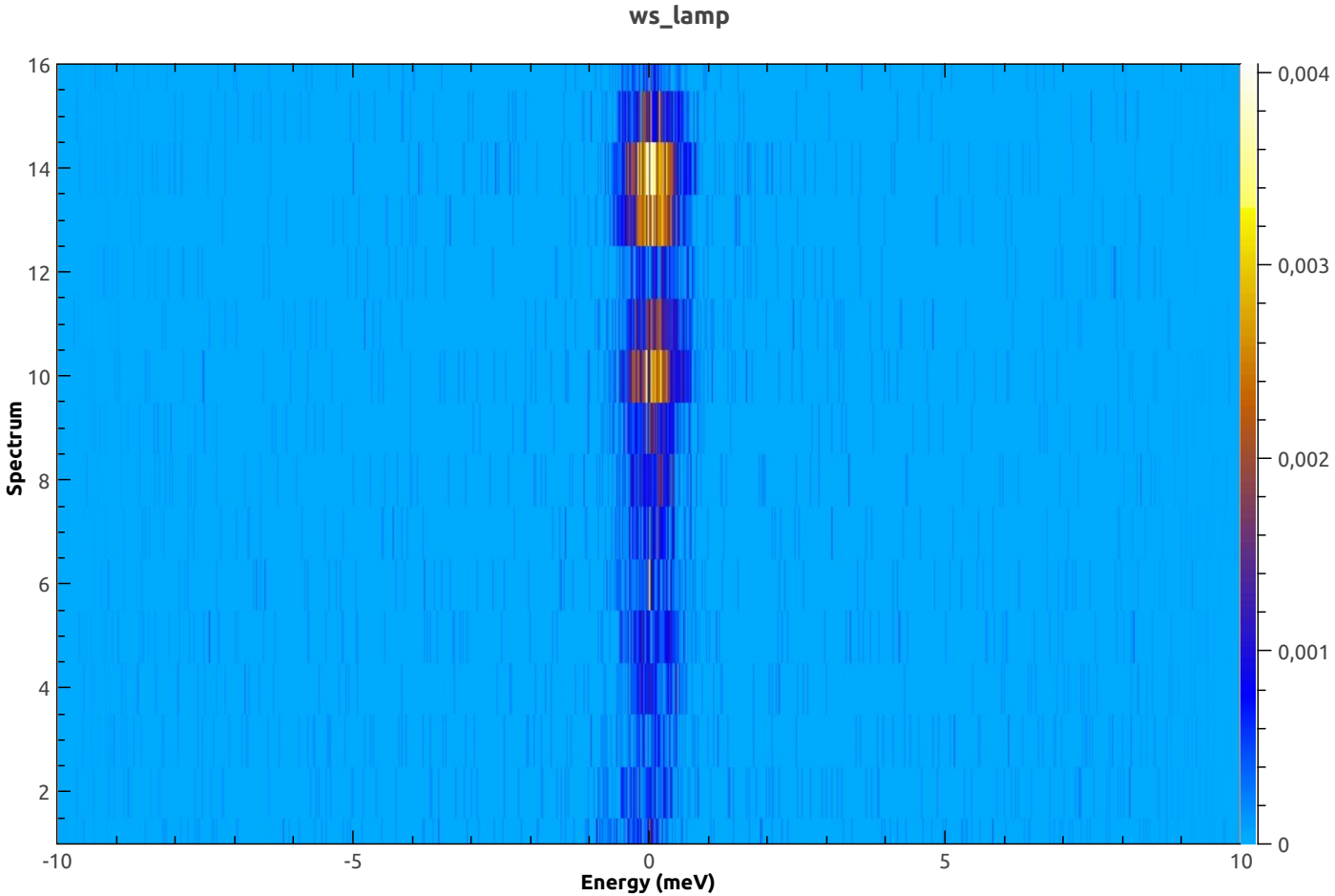
Backscattering Data Analysis with Mantid and Lamp

- Investigation of Qens data, instrument IN16b
- Images generated by the Mantid-Python interface (limited functionality: font size, close figure, automatic xlabel meV (μeV) ...)
- Python functions and scripts for Mantid-related analysis using LoadLamp, IndirectILLReduction, NormaliseToUnity, ...

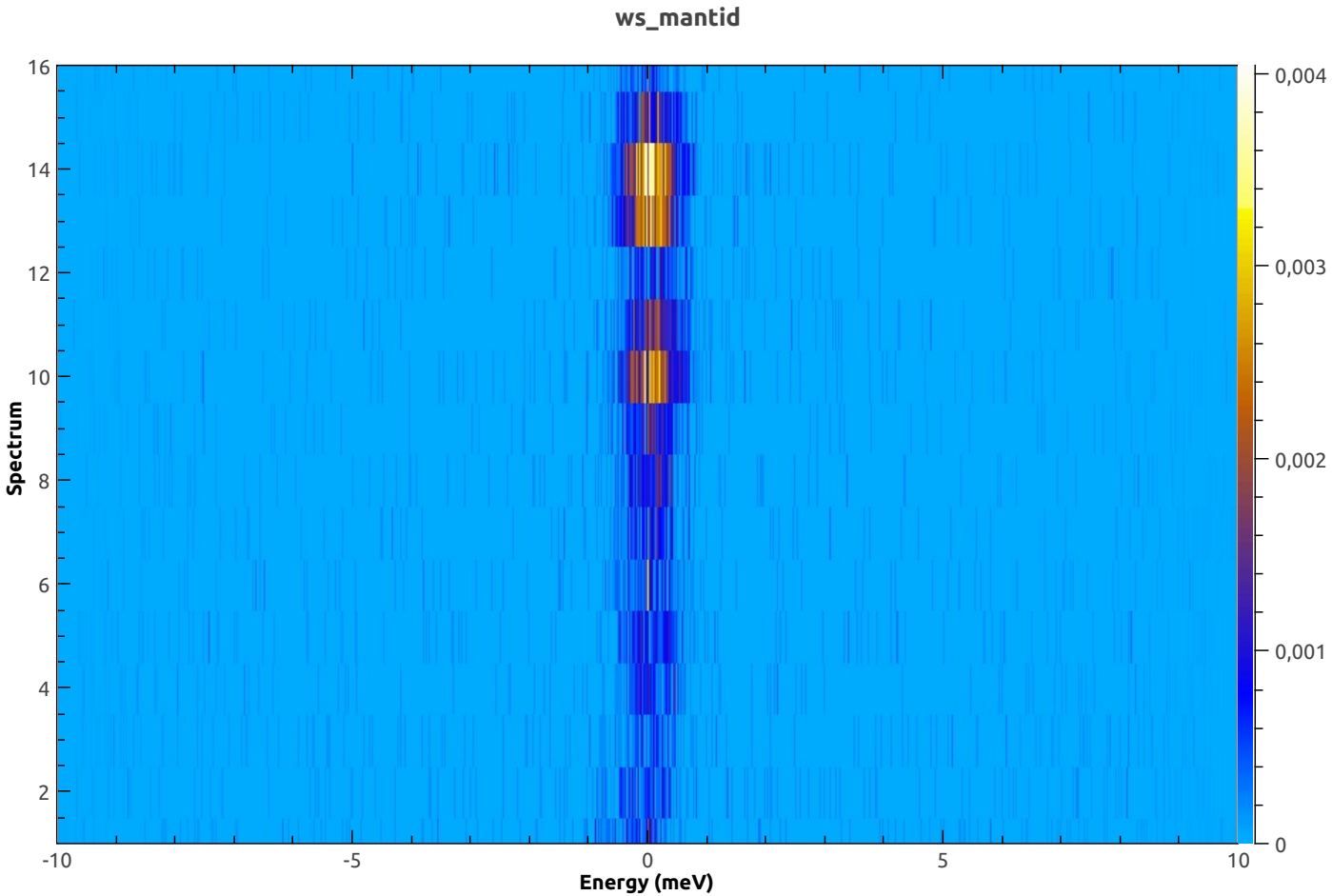
Left workspace Lamp, 127500.nxs

Lamp: rdset, fws=0, unmirror=2, /noraw, bsnorm=1

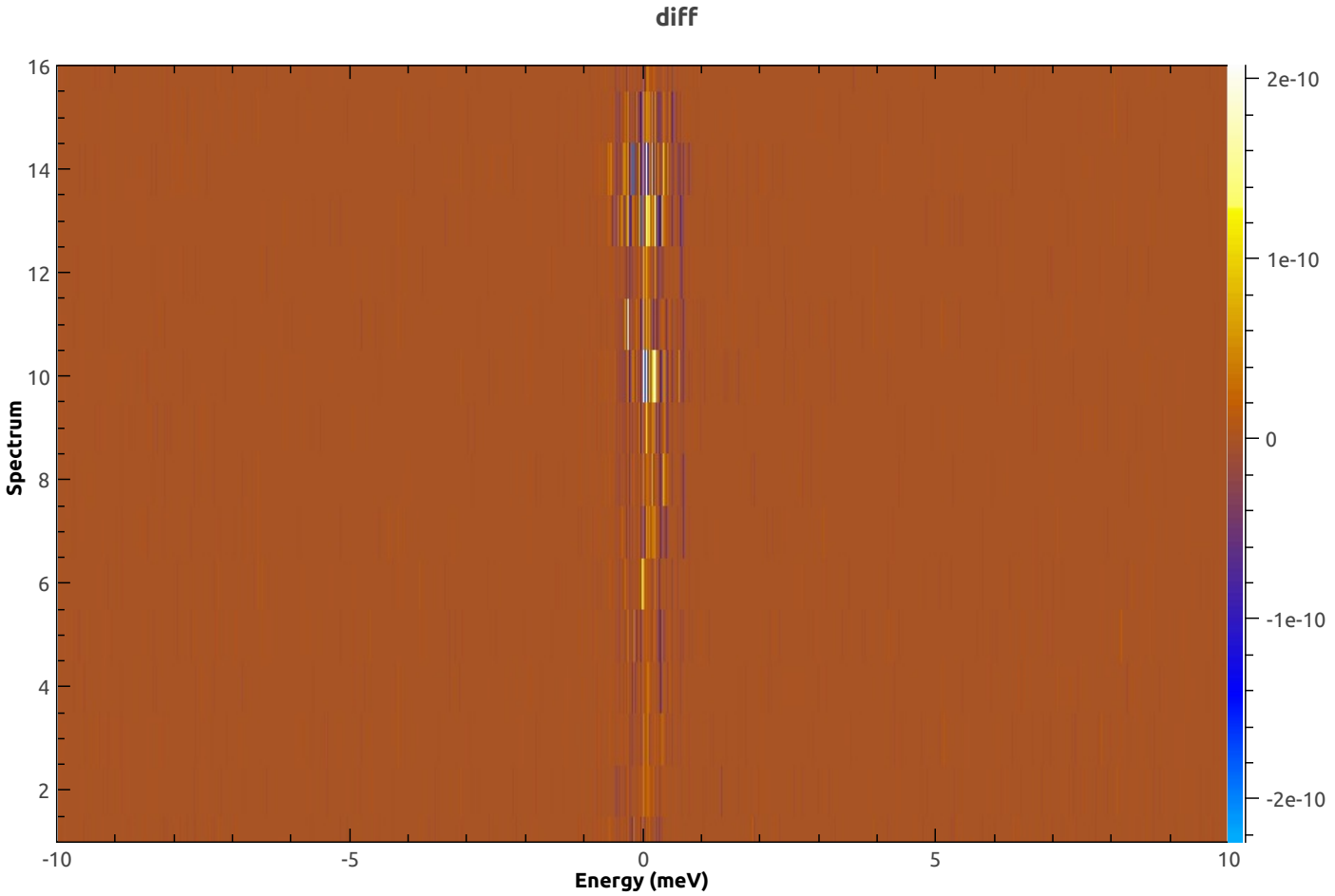


Left workspace Mantid, 127500.nxs

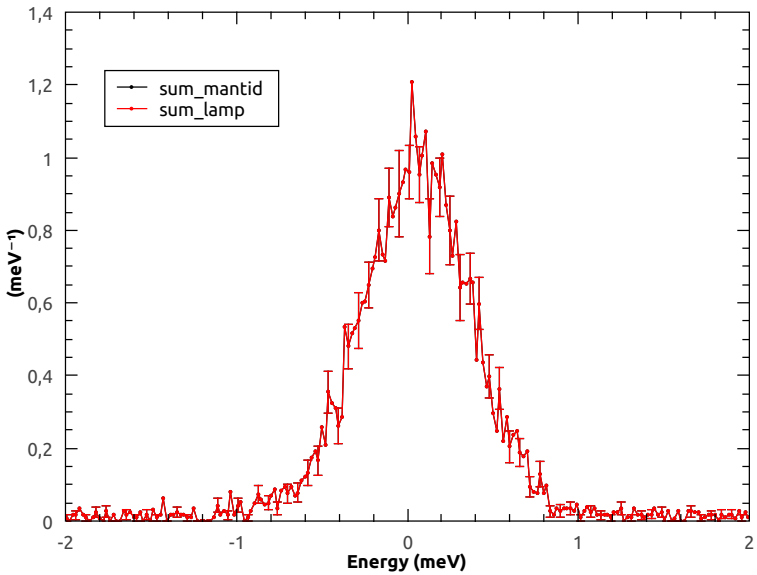
Mantid :

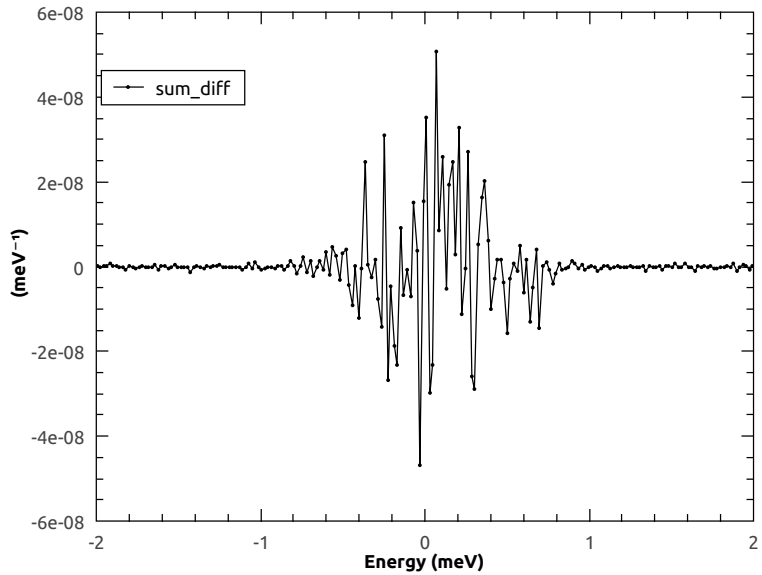


Left workspace differences

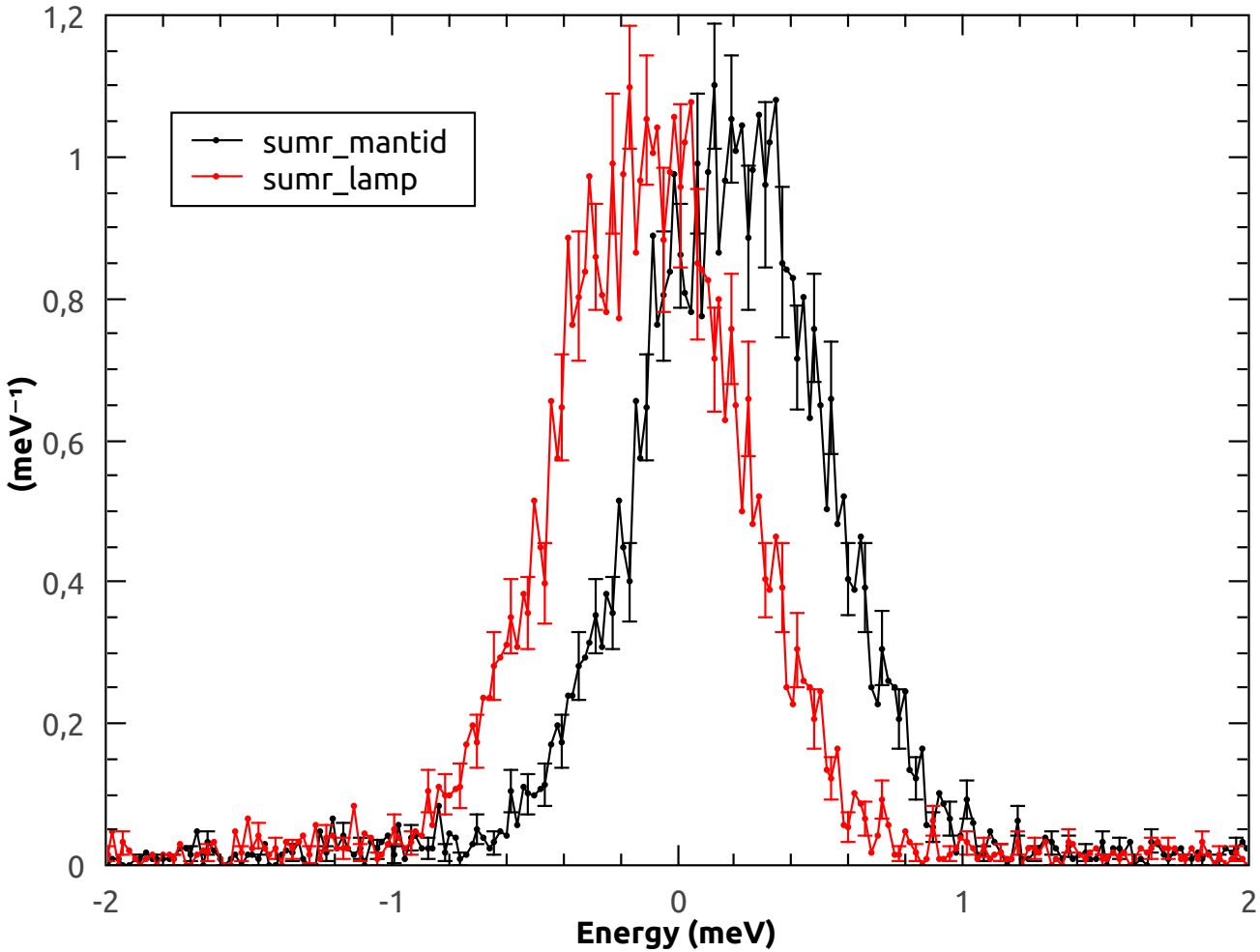


Sum over single spectra for left workspace of 127500.nxs





Sum over single spectra for right workspace of 127500.nxs



Lamp right workspace cropped at the end according to monitor range like in Mantid

Shift explanation: Mantid right workspace 16 first bins are zero.

Mirror mode

Lamp (single temperature):
rdset, fws = 0, rdset, unmirror = 1
w1=rdsum(127493,127505), w2=bsnorm(w1)
w3=total(w2(*,2:17),2), w4=tee(w3)

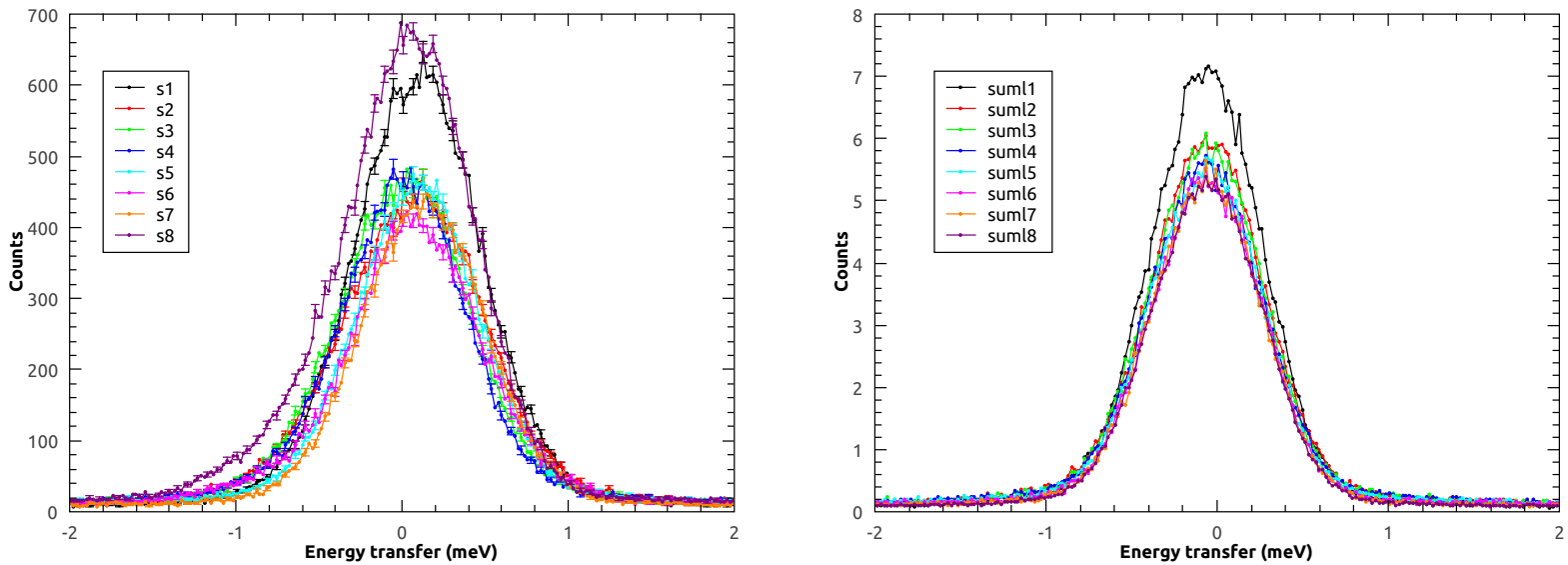


Figure : Left: Mantid (MergeRuns, 1 min computation time, 1016 bins), right: Lamp (rdsum, 1024 bins). Temperatures 550C, 560C, 570C, 590C, 610C, 650C, 700C, 750C

Normalisation in Lamp and Mantid causes different magnitudes, ...