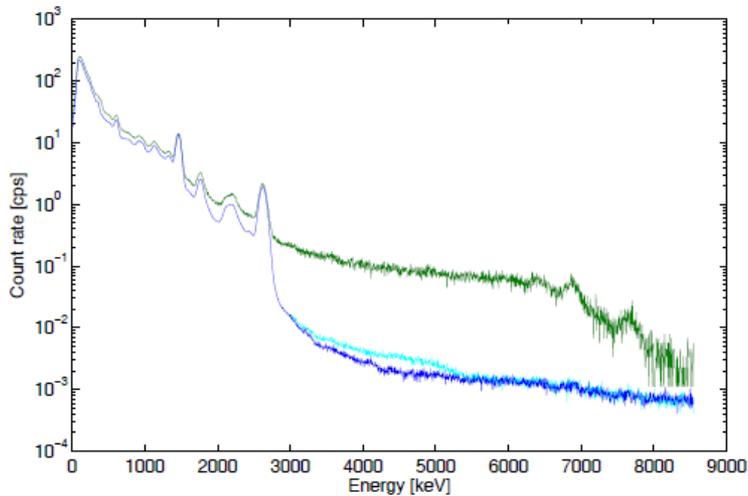


Typical gamma spectra obtained with NaI. Spectrum I, was collected when ^{256}Cf neutron source was in place, Spectrum II, was obtained after the removal of the neutron source.



Gamma detection taken with a NaI cylinder. The green line shows the ^{256}Cf spectra, the dark blue line shows the background, the light blue line shows the same background measurement taken after the neutron source measurement: the increasing counting rate from around 2.0 up to 5 MeV in the background indicates that the NaI crystal was slightly activated by the neutron flux.

The preliminary results demonstrate that a neutron detection ability can be added to a NaI spectrometer with only slight modifications. One of the future goals will be to find a proper neutron moderator specifically studied for home security applications. A 10 cm thick polyethylene shield could be a reasonable solution, a good compromise between size, weight, neutron thermalization performance and increasing of neutron detection efficiency.