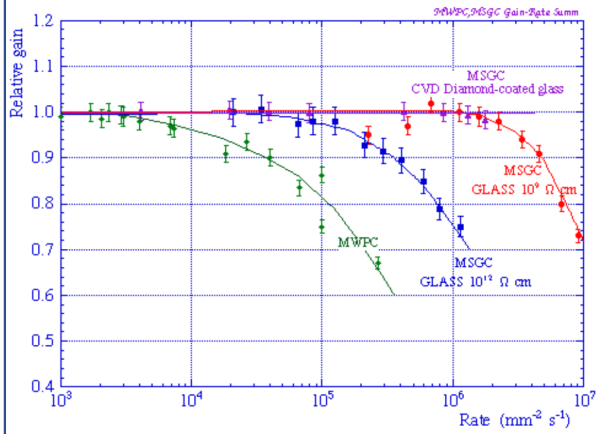
Bruno Guérard, 19 Oct 2022

In the late 80s, A. Oed started the development of the MSGC detector for neutron scattering science.

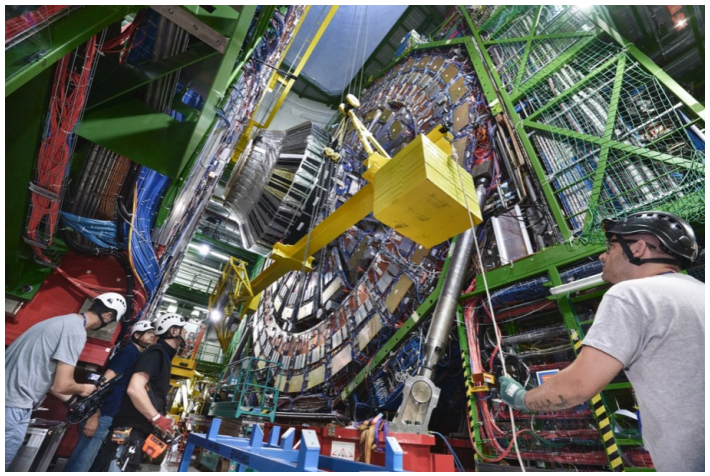
A lot of work has been carried out by A.Oed during a decade to optimize both the geometry of the MSGC electrodes as well as the substrate material.

The first instrument to benefit from this technology in 2000 is the D20 Powder Diffractometer.
The D20 detector is still in operation, like several other MSGCs used on other instruments at ILL.



MSGCs allow to reach a much higher counting rate and a better spatial resolution than MWPCs. These features are of high interest for X-Ray detection, and in High Energy Physics, in particular for tracking MIP particles.
… but MSGCs suffer from a severe drawback in HEP : the multiple scattering generated by the glass substrate is too high.

Strongly inspired by the work of A.Oed, the HEP community developed several detectors based on the same techniques as MSGCs but with lighter substrates.
GEM, and Micromegas are the most famous representatives of these so-called MPGDs (Micro-Pattern-Gas Detectors),



As an example of MPGD applications, the CMS detector at CERN was recently equipped with a GEM sub-detector to improve the muon-tracking and trigger capability of CMS in the High Luminosity era which will start in 2026.
The GEMs used for this sub-detector are the largest ever built (more than a meter long)

The Oed Prize aims at rewarding a major contribution in the development of MPGDs by a scientist presently active in the field: ***https://indico.cern.ch/event/757322/page/16731-awards***