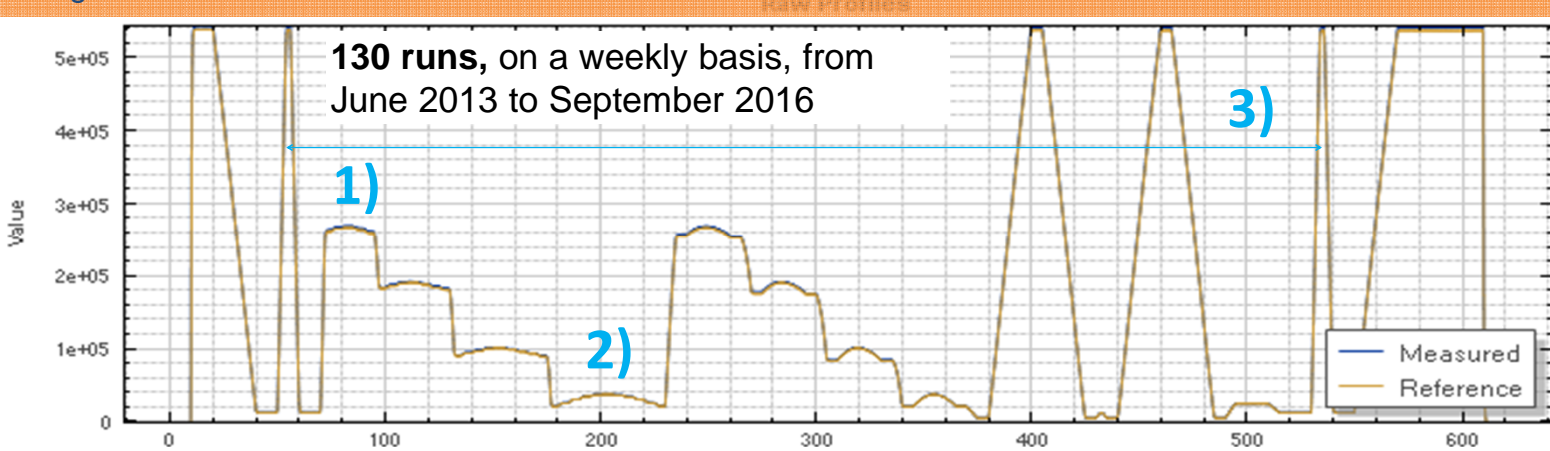




# Quality assurance of TomoEDGE Dynamic jaws: a retrospective analysis with the statistical control charts approach.

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The results of the “**Dynamic Jaws Sweep**” (DJS) automatic procedure were retrospectively analyzed using the **statistical control charts**.



## Quantitative aspects.

DJS tests the jaws movement functions with specific exercises and measures:

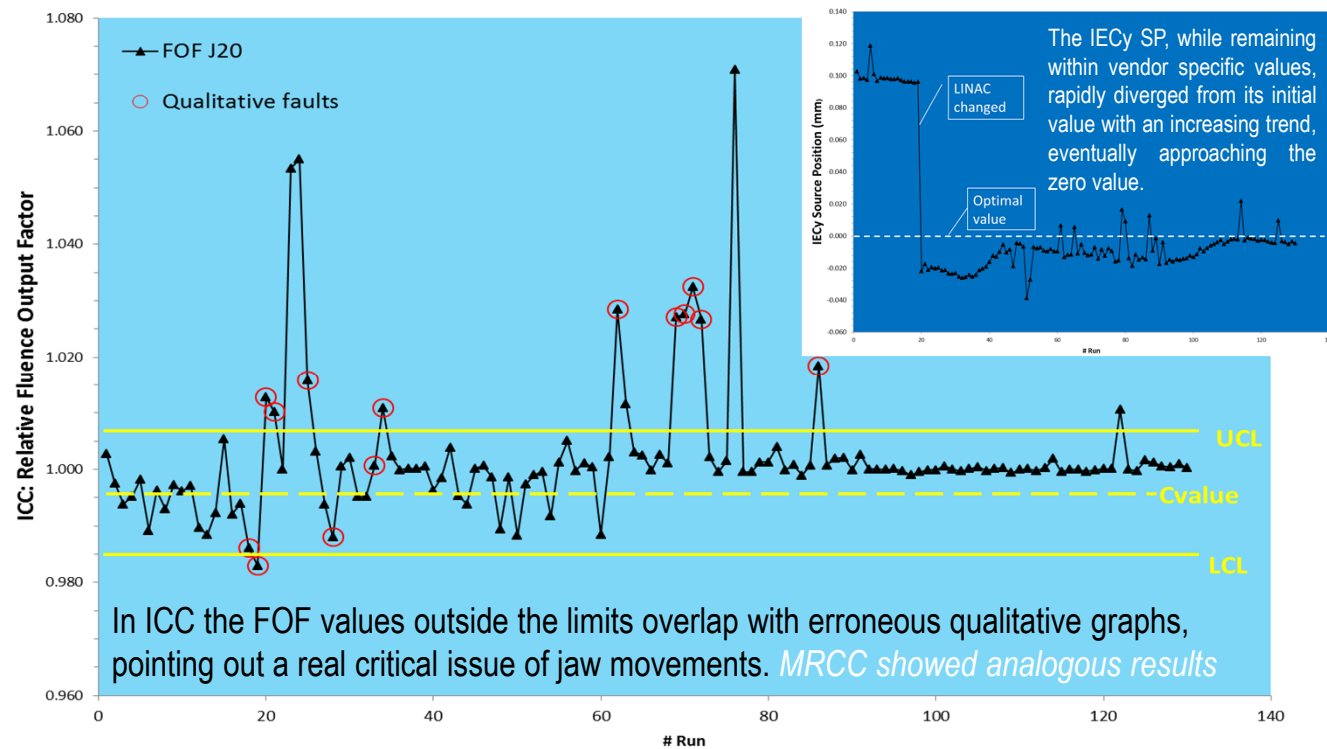
- 1) the fluence output factor (FOF) for the three clinical jaws aperture (J20,J14,J7);
- 2) linac photon source position along the longitudinal direction (IECy SP);
- 3) the time skew .

**Qualitative aspects:** graphs related to specific exercises are also produced.

Statistical Chart Control used:

- Individual Chart Control (ICC)
- Moving Range Chart Control (MRCC)

the **Central value**, the **Upper and Lower Control Limit** are based on the average and on the statistical variance of the first 10 runs.



Time skew	4.6%	9.0%
J7	20.0%	14.3%
J14	13.1%	10.1%
J20	12.3%	9.2%
Out of limits	ICC	MRCC

**Conclusions** Control chart approach seems to be an useful tool for studying in depth the results of the DJS procedure.

Much more stringent TQA limits, based on the own machine behavior, are useful to easily detect critical issue related to the dynamic jaws movements.