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CalxPy: a software for the calibration of geophysical systems against a reference

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The IMS Operational Manuals for waveform stations require that IMS stations be calibrated regularly. Since 2012, the PTS had relied mostly on electrical calibration to meet that requirement.

However electrical calibration comes with some challenges (no traceability, integration and sustainment issues, high operating costs...).

A part of the geophysical community, including Station Operators, has started performing regular calibrations by comparison against a co-located reference. This method allows a more systematic and centralized approach to calibration. Over the past few years it has been gradually more used at IMS stations, particularly infrasound. In this context, the PTS is developing tools to support this alternative approach.

Here we present CalxPy, a web-application developed at the PTS for the calibration of geophysical systems by comparison. With CalxPy, one can calculate, store and display the response of a system for a given period, or track the evolution of the response against time or environmental variables. CalxPy also allows the refinement and evaluation of the measured response against a baseline, and the reporting of IMS2.0 calibration results.

CalxPy supports the Initial calibration and On-site yearly calibration processes, as well as Data Quality Control.

CalxPy can be deployed in the IDC pipeline and in NDC-in-a-box.

Promotional text

CalxPy is a versatile software solution that supports the implementation of a passive and traceable calibration method based on the principle of comparison against a reference. This method can be applied across all IMS waveform technologies.

Primary authors: Mr DOURY, Benoit (CTBTO Preparatory Commission, Vienna, Austria); Ms KETATA, Ichrak (Zuehlke Engineering, Vienna, Austria)

Presenter: Mr DOURY, Benoit (CTBTO Preparatory Commission, Vienna, Austria)

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