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Development of k_0 -cyclic neutron activation analysis at the Portuguese research reactor

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The fast pneumatic transfer system (SIPRA) for short irradiations at the Portuguese research reactor has been upgraded with a new spectrometer incorporating Zero-DeadTime corrections and new software for use alongside a modern computer. The development of cyclic NAA based on the k_0 methodology for SIPRA has been performed. To ensure the accuracy of the system for very short lived nuclides (e.g. ^{77}mSe and ^{20}F), the calibration of transit time with millisecond timing resolution was performed. The results of k_0 -cyclic NAA for standard reference materials have been shown with a particular focus on selenium.

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