

T05. Adaptive polynomial approximation of chromatographic peaks

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Savitsky-Golay algorithm is one of the most frequently used noise filtration algorithms in chromatography. It is based on polynomial approximation of the chromatogram and provides excellent reduction of noise without big modification of peak shape. Besides, in some case it is difficult to implement it, as in the case of e.g. triangular peaks, like in capillary electrophoresis, optimal numbers of points for effective noise reduction for left and right slopes of the peak are significantly different.

We implemented peak approximation using different number of points for either slope of the peak, depending on the slope “width”. This approximation allows accurate calculation of peak parameters even for very asymmetric peaks. This kind of peak approximation is complemented by effective noise filtration, also based on Savitsky-Golay algorithm.

Filtration and approximation results are compared using several examples from different kinds of chromatography.