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Simple finite mixture model to deconvolve excitation-emission matrices.

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Decomposition of EEMs is in important step in analysis of excitation-emission matrices (EEMs). This poster is based on a previous work (Butturini and Ejarque, Biogeosciences, 10, 5875-5887, doi:10.5194/bg-10-5875-2013, 2013) in which a simple mathematical algorithm that automatically deconvolves individual EEMs is described. A mixture model approach is adopted to decompose complex surfaces into asymmetric-Gaussian sub-peaks. The laplacian operator and the Nelder-Mead optimization algorithm are implemented to individuate and automatically locate potential peaks in the EEM landscape. The EEMs of dissolved organic matter samples collected in a Mediterranean river are used to describe the model application, and to illustrate a strategy that optimises the search for the optimal output.