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## Routines of <sup>210</sup>Po determination in fluvial sediments for dating purpose

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During the last decades, <sup>210</sup>Pb and its daughter <sup>210</sup>Po have become widely used radionuclides for sediment dating. In environmental sediments, the total amount of <sup>210</sup>Pb is given by two components: (a) supported <sup>210</sup>Pb, produced by radioactive decay of <sup>222</sup>Rn inside the material, and (b) an unsupported <sup>210</sup>Pb component derived from <sup>222</sup>Rn which diffuses into the atmosphere where decays. Subsequently, <sup>210</sup>Pb is removed by atmospheric precipitation or dry deposition, falling on the land or water surfaces.

The dating method often applies determination of <sup>210</sup>Po supposing the radioactive equilibrium with <sup>210</sup>Pb. Utilized analytical procedures generally consists from several basic parts: (a) isolation of measured radionuclide by leaching or total decomposition of sample matrix or polonium distillation; (b) measurement by alpha spectrometry or by liquid scintillation counting; (c) determination of supported <sup>210</sup>Pb. Our contribution will compare several sample preparation techniques and possibilities of measurement with regards to sample matrix, time and instrumentation requests.

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