

# BICUBIC SPLINE ESTIMATOR FOR PROBABILITY DENSITY FUNCTIONS of RAW WATER PROPERTIES

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**Abstract:** *Drinking water represents a limited natural resource on the planet Earth, and will, in the time to come, be the focus of scientific research related to sustainable development strategy (SDS). SDS concerning with raw and drinking water as support implies the application of wide array of statistical and mathematical techniques, econometric tools and artificial intelligence heuristics. In this paper, a contribution to one such strategy based on 3D probability density functions (PDF) has been presented. Modeling probability density function was carried out by Bicubic Spline software Estimator-a developed by the authors in Visual Studio 12, the C# programming environment. PDFs have been modeled for raw water properties (physical-chemical, microbiological, and other parameters) for the Case Study in the district of Zlatibor the Republic of Serbia which has the number over 320.000,000 inhabitants. The obtained PDFs of raw water quality, could be essential for the management and planning of the drinking water supply in the future.*

**Keywords:** *Quality of Raw Water, Probability Density Function, Bicubic Spline Estimator*