1125-49-1481 **Viktoria Taroudaki*** (victtar@uw.edu), 1959 NE Pacific St., Seattle, WA 98195, **Costas Smaragdakis** (kesmarag@gmail.com), Voutes University Campus, 70013 Heraklion, Crete, Greece, and **Michael Taroudakis** (taroud@uoc.gr), Voutes University Campus, 70013 Heraklion, Crete, Greece. *Statistical Near-Optimal Filtering Method with Application to Underwater Acoustics.* Preliminary report.

The signal characterization method suggested by Taroudakis et al (J.Acoust. Soc. Am. 119, 1396-1405 (2006)) based on the statistics of its 1-D wavelet transform coefficients and successfully applied for inverting acoustic signals in applications of acoustical oceanography, is sensitive to noise contamination of the signal but still, it provides good inversion results if an appropriate denoising strategy is applied. In this work the statistical signal characterization is applied to signals which are both blurred and noise contaminated. Deblurring of the signal is achieved by means of a technique introduced by Taroudaki and O' Leary (SIAM J. Sci. Comput. 37-6 A2947-A2968 (2015)) for image deblurring, and it is based on a statistical near optimal spectral filtering technique that takes advantage of the singular values of the approximated blurring matrix and the Picard Parameter of the signal that allows for estimation of the additive noise properties and estimation of the error. The study is extended to cases when no accurate knowledge of the blurring mechanism is available. It is shown by typical simulated experimental data, that the combination of deblurring and simple denoising strategies provide good results with respect to both signal characterization and subsequent inversions. (Received September 19, 2016)