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Pando Georgiev* (pandogeorgiev@gmail.com), Department of Mathematics, University of Central Florida, 4393 Andromeda Loop N, Orlando, FL 32816, and **Zuhair Nashed** (zuhair.nashed@ucf.edu), Department of Mathematics, University of Central Florida, 4393 Andromeda Loop N, Orlando, FL 32816. Sampling from several functions and simultaneous reconstruction. Preliminary report.

Assume that we have samples (point values) from several functions, however we do not know which samples to which function belong. We develop sufficient conditions for reconstruction of all functions from the given point values, using the theory of reproducing kernel spaces. We present algorithms for this functions reconstruction problem and discuss connections with the statistical learning theory. (Received September 23, 2015)