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**Pengwen Chen\*** ([pengwen@math.uconn.edu](mailto:pengwen@math.uconn.edu)), Department of Mathematics, 196 Auditorium Road, University of Connecticut, U-3009, storrs, CT 06269. *A novel kernel correlation model with correspondence estimation.*

We present a multiple linked iterative closest point method to estimate the correspondence and the rigid/nonrigid transformation between point-sets/shapes. The estimation task is carried out through maximizing a similarity function which is the product of square root functions and a kernel correlation. Intuitively this correspondence estimation framework is modified from the well-known mass transport problem. The local mean square error analysis and robustness analysis are provided to show its superior performance to the kernel correlation method. (Received September 15, 2009)