1128-90-314   **Bala Krishnamoorthy*** (`bkrishna@math.wsu.edu`), bkrishna@math.wsu.edu, and **Sudipta N Sinha**. *Image correspondence recovery via binary quadratic programming.* Preliminary report.

We investigate an approach based on global optimization for matching features in a set of images. Our technique assumes that pairwise similarities or affinities between sets of image features are given. The set of matching features found by our algorithm explicitly satisfy cycle consistency across multiple images. Unlike previous convex methods relying on semidefinite programming and low-rank matrix recovery techniques, our technique is based on binary quadratic programming. Our main insight is that using a series of carefully chosen relaxations of the binary quadratic variables into binary variables, the problem can be cast into a linear program that can be efficiently solved by existing solvers. We evaluate the utility of our method for solving difficult image correspondence problems involved in matching multiple images of different semantically related object instances. (Received February 28, 2017)