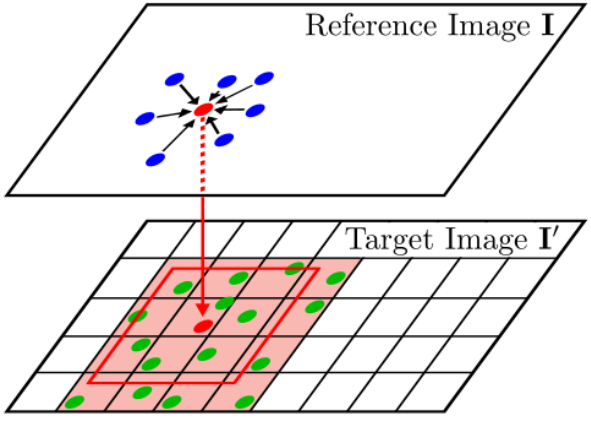
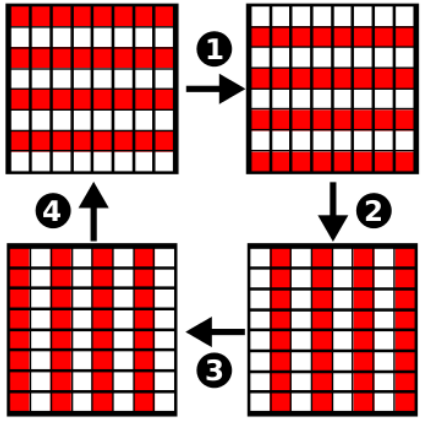
Discrete Optimization for Optical Flow

M. Menze, and A. Geiger (GCPR 2015)

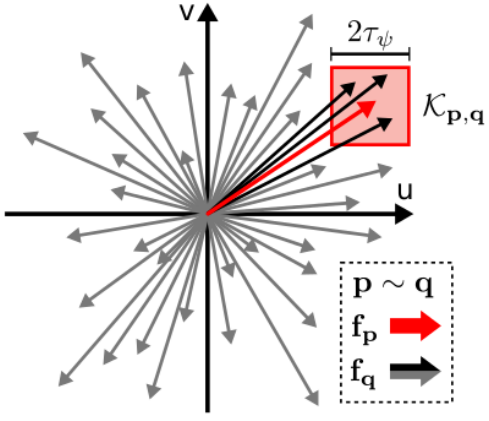
Diverse Flow Proposals



BCD Optimization



Truncated Penalty



- Optical flow as a discrete inference problem in a CRF, followed by sub-pixel refinement
- Diverse (500) flow proposals by approximate nearest neighbour search based on appearance (Daisy), and by respecting NMS constraints
- Pre-computation of truncated pairwise potentials, further accelerated via hashing
- BCD by iteratively updating alternating image rows and columns
- Post-processing as forward backward consistency check and removing small segments
- Epic Flow for interpolation
- Evaluated on Sintel and KITTI benchmarks