

Linearization in 3D reconstruction

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In 3D reconstruction problem, there are usually three kinds of variables: 3D position of object points, camera pose, relationship between objects and cameras(etc. depth information). Now we are focusing on pose free reconstruction, which means we don't know camera pose. In this case 3D reconstruction is a nonlinear problem. It consists of several nonlinear equation sets. How to solve these equation sets is a challenging problem. Traditionally, people use optimization methods. But these methods need good initial guess. Our goal is to linearize these equations s.t. we can solve them directly.