Overview: A 3D Surface Tracking Algorithm

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1   Introduction

This algorithm constructs a surface model from edge voxels. A voxel is identified as being on the surface if its second derivative is negative and changes sign for neighbors in the gradient direction. By this definition, there can only exist one layer of surface voxels, and the tracking algorithm is simply a breadth-first search. Moreover, the definition of surface voxels is not sensitive to gradient directions, thus this approach is robust against noise. The test results on real data are also reported.

2   Surface Identification

3   The Surface Tracking Algorithm