

Stereo-Based 3D Reconstruction of Dynamic Fluid Surfaces by Global Optimization

Supplemental Material

Paper ID: 455

1 Extension to Fig. 3 in the Paper

Here we show the evaluation results on the *PCA* normals and the *RightSnell* normals.

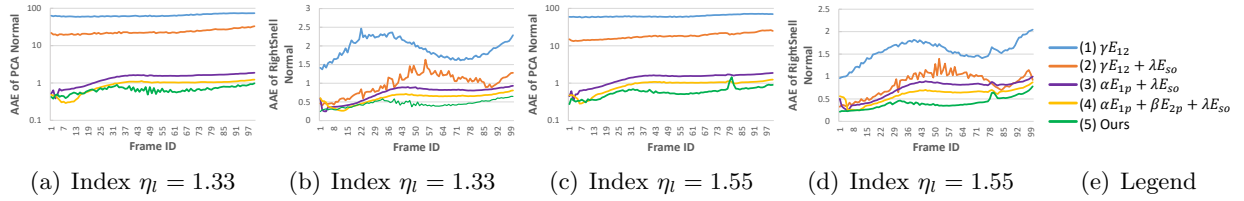


Figure 1: Evaluations on the *PCA* and *RightSnell* normals for synthetic wave. (a) and (b) show the error plots when the refractive index $\eta_l = 1.33$ is used in wave simulation. (c) and (d) show the error curves when $\eta_l = 1.55$ is used in wave simulation. Note that, for better visualization, the 10-base log scale is used for the vertical axes in (a) and (c).

2 Video for Fig. 4 in the Paper

Please see the supplemental video named “Fig4.mp4”.

3 Extension to Fig. 5 in the Paper

Here we show refractive index estimation on additional frames for synthetic data.

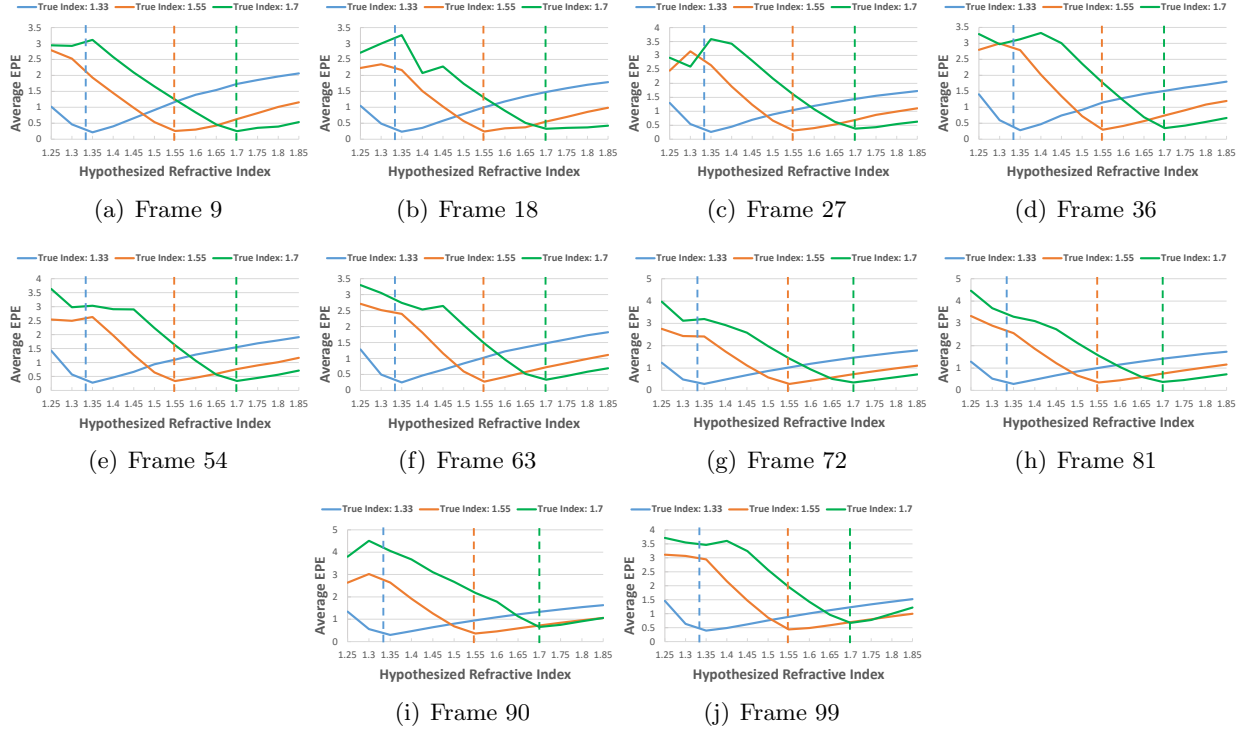


Figure 2: Refractive index estimation for synthetic data. The vertical dashed lines indicate the ground-truth indices.

4 Video for Fig. 6 and Fig. 9 in the Paper

Please see the supplemental video named “Fig6_Fig9.mp4”, which includes the results of the traditional stereo-based method and our approach.

5 Video for Fig. 7 in the Paper

Please see the supplemental video named “Fig7.mp4”.

6 Processing Time

Water Wave		Wave 1	Wave 2	Wave 3
# of Frames		100	100	50
# of Correspondences Per Frame		101904	101904	101904
Refraction Index Estimation (in hours)		2.1	2.2	2.2
Reconstruction (in minutes per frame)	First Frame	11.3	11.6	11.0
	Other Frames	5.8	5.9	5.8

Table 1: Running time for the three real wave sequences.