

Towards Monocular Shape from Refraction-Supplementary Material

Antonin Sulc¹

antonin.sulc@uni-konstanz.de

Imari Sato²

imarik@nii.ac.jp

Bastian Goldluecke¹

bastian.goldluecke@uni-konstanz.de

Tali Treibitz³

ttreibitz@univ.haifa.ac.il

¹ Computer Vision and Image Analysis

University of Konstanz

Konstanz, Germany

² National Institute of Informatics

Tokyo, Japan

³ Charney School of Marine Sciences,

University of Haifa,

Haifa, Israel

1 More Detailed Evaluations

Fig. 1 and Fig. 2 show detailed frame-wise RMSE and MAE results on *wave1* and *wave2* respectively.

2 Visualizations

Images from and results of our real-world experiment are in the attached video file *rw.avi*. In each frame, the left image shows the background image in the first frame and input images in all further frames. The right image shows the reconstructed surface.

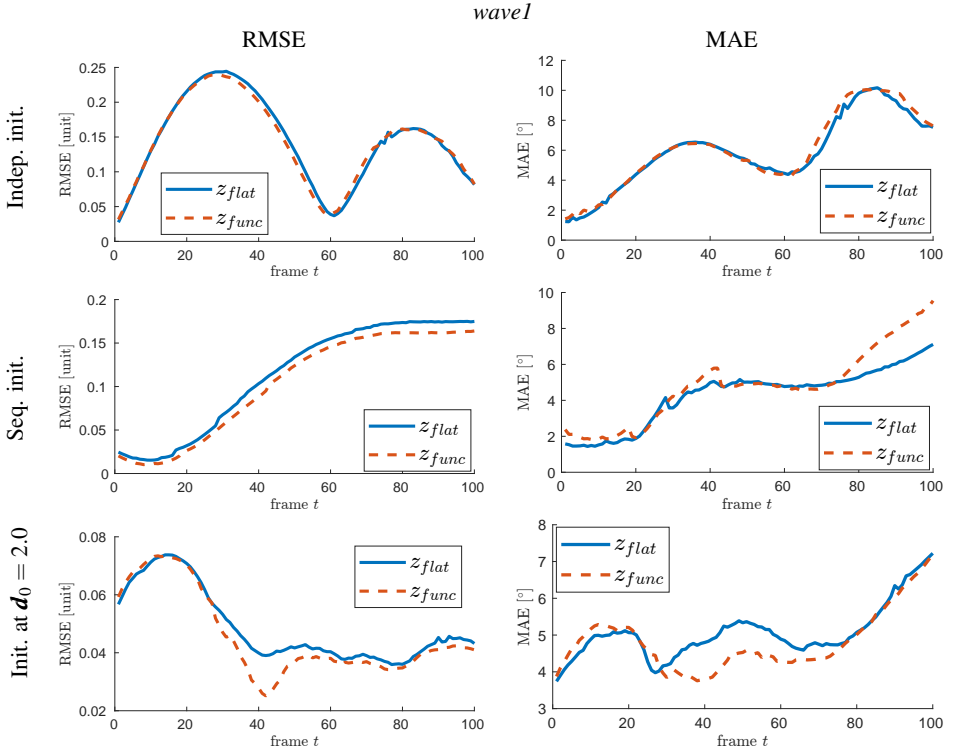


Figure 1: Frame-wise RMSE and MAE evaluation of *wave1* with different initialization schemes. The left column shows RMSE of estimated depth \hat{z} from the ground truth depth. The right column shows MSE of estimated normals \mathbf{n} from the ground truth. The first row shows results where each frame is initialized with our scheme independently. The second row shows results where each frame is initialized with the estimate from the previous frame except the first, which is initialized with our scheme. The third row shows results where each frame is initialized with an identical $\mathbf{d} = 2$ which is close to the mean location of the ground truth surface.

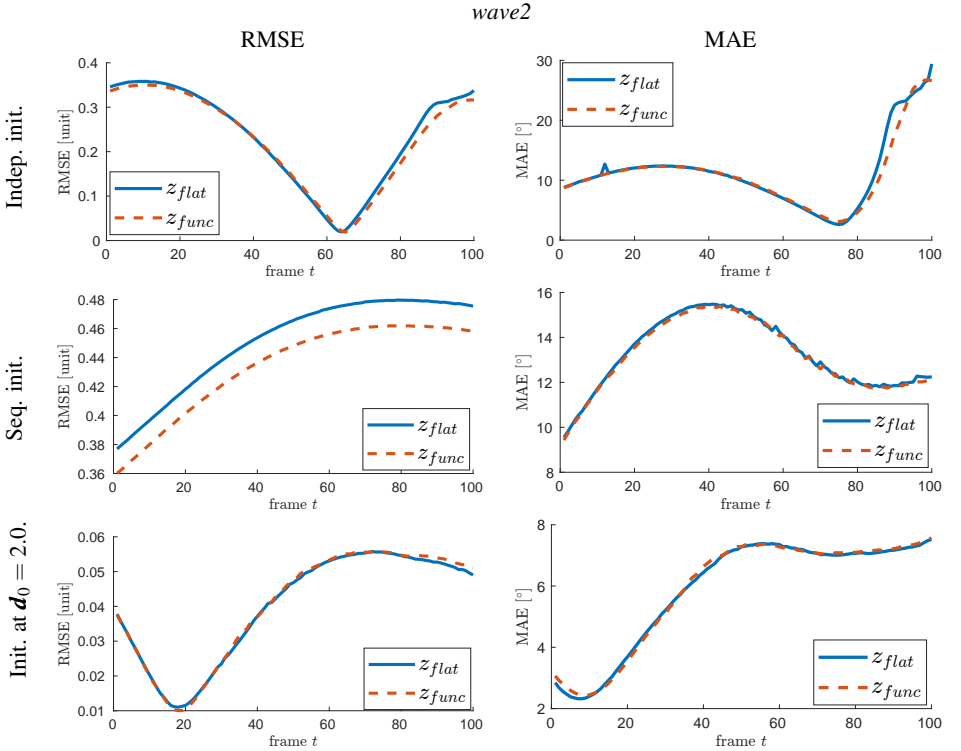


Figure 2: Frame-wise RMSE and MAE evaluation of *wave2* with different initialization schemes. The left column shows RMSE of estimated depth \mathbf{z} from the ground truth depth. The right column shows MSE of estimated normals \mathbf{n} from the ground truth. The first row shows results where each frame is initialized with our scheme independently. The second row shows results where each frame is initialized with the estimate from the previous frame except the first, which is initialized with our scheme. The third row shows results where each frame is initialized with an identical $\mathbf{d} = 2$ which is close to the mean location of the ground truth surface.