







(b)

Figure 6. The bathymetry estimation in 2D and 3D

#### 4. CONCLUSION

Because of the penetration of visible light in water and the large swath, optical satellite images are suitable for water depth estimation in shallow water area, especially for islands which cannot be easily reached. In this study, a back

propagation neural network is adopted for this purpose. Our preliminary result for WorldView-2 multispectral remote sensing images has RMSE less than 3 meters for both training and testing samples. Although we do not have ground truth for the whole area, the reconstructed bathymetry in 2D and 3D is reasonable. Finally, since the error assessment of training samples indicates the under estimation in deep area, the improvements can be expected with some modifications.

#### 5. REFERENCES

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