Pemodelan pasang surut tiga dimensi perairan Negara Kesatuan Republik Indonesia menggunakan regional ocean modeling system = Three dimensional tide modeling of Indonesian water using regional ocean modeling system

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Abstrak

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Regional Ocean Modeling System (ROMS) merupakan salah satu jenis pemodelan yang dapat digunakan untuk memodelkan pasang surut pada wilayah regional yang relatif luas. Tesis ini melakukan studi tentang pemodelan pasang surut menggunakan ROMS untuk wilayah Indonesia dengan membagi menjadi 4 zona. Data yang digunakan adalah data konstanta pasang surut dari TPXO tahun 2007 (TPXO7), data batimetri resolusi 1 menit dari etopo serta data dari World Ocean Atlas Tahun 2009 (WOA09) berupa data temperatur, salinitas, serta densitas dari kedalaman 0 hingga 5500 meter. Sebagai validator digunakan data pengamatan pasang surut tahun 2013 dari stasiun pasang surut permanen milik Badan Informasi Geospasial. Hasil pemodelan ini memiliki akurasi dan tingkat kepercayaan yang baik untuk hampir di seluruh wilayah perairan NKRI dengan nilai RMSE antara 9.4 cm hingga 24.4 cm namun hasil yang kurang baik didapat pada perairan sekitar Merauke, Papua dengan nilai RMSE 62 cm.

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ABSTRACT

Regional Ocean Modeling System (ROMS) is one of the models that can be used to simulate tidal regionally on relatively wide range area. Tidal modeling using ROMS in this thesis were performed by dividing Indonesian region into 4 different zones. Harmonic constituent data from TPXO year 2007 (TPXO7), Bathymetry data with 1 minute resolution from etopo, and World Ocean Atlas data year 2009 such as; temperature, salinity, inner density depth of 0 ? 5500 meters were used as the model?s inputs. As the validators, Badan Informasi Geospasial?s tidal observation data year 2013 from permanent tidal gauge stations were used. The modeling result shows good accuracy and reliability in almost all Indonesian water with RMSE between 9.4 ? 24.4 cm. However, bigger RMSE up to 62 centimeters were found in Merauke water, Papua.;Regional Ocean Modeling System (ROMS) is one of the models that can be used to simulate tidal regionally on relatively wide range area. Tidal modeling using ROMS in this thesis were performed by dividing Indonesian region into 4 different zones. Harmonic constituent data from TPXO year 2007 (TPXO7), Bathymetry data with 1 minute resolution from etopo, and World Ocean Atlas data year 2009 such as; temperature, salinity, inner density depth of 0 – 5500

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