

Penghitungan kapasitansi pada electrical capacitance volume tomography (ecvt) dengan menggunakan metode artificial neural network = Calculations capacitance on electrical capacitance volume tomography (ecvt) with method using artificial neural network

Almushfi Saputra, author

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Abstrak

Metode artificial neural network digunakan dalam penghitungan nilai kapasitansi pada problem maju dari sistem ECVT untuk proses rekonstruksi semi non linear. Nilai kapasitansi hasil prediksi neural network didapatkan dari input distribusi permitivitas yang menunjukkan hasil citra yang diinginkan. Metode training neural network yang digunakan adalah training backpropagation. Pasangan input dan output data training didapatkan dari hasil simulasi menggunakan software COMSOL Multiphysics 3.4 yang kemudian ditraining menggunakan software Toolbox Neural Network pada Matlab R2007b. Hasil rekonstruksi citra semi nonlinear dibandingkan dengan hasil rekonstruksi linear.

<hr>Methods of artificial neural network used in the calculation value of capacitance in the forward problem of the system for the semi non-linear reconstruction of ECVT. Capacitance value of neural network predicted results obtained from the input distribution of permitivitty results indicate that the desired image. Training method used by neural network is backpropagation training. Pair input and output data obtained from the training results of the simulation using COMSOL Multiphysics 3.4 software, which then use the software Neural Network Toolbox in Matlab R2007b to train neural network. Results semi nonlinear image reconstruction compared with the results of the linear reconstruction.