Use CVAE to inverse crust model

**Requirements**

Python 3.6.5

TensorFlow-gpu 1.9.0

numpy

scikit-learn

scipy

keras

**Datas**

Training data：trainX.txt , trainY.txt

**Process**

Run ObsData-ETR.py to regress on observed data.

Run TrainData.py to attain training data.

Run CVAE-2D-Regression to train the model.

**Results**

Below region refer to inversion region, Sedu,Sedm,Sedl refer to upper,middle and lower sedimentary layer, Crsu,Crsm,Crsl refer to upper,middle and lower crust.

Parameter refer to thick(th),p-wave velocity(vp), s-wave velocity(vs) and density(ro)

Res\ region\_parameter.txt :crust model

Res\ region\_parameter \_sigma.txt: corresponding variance

Res\Similarity\_region.txt: similarity between input data and reconstruction data

cvae\_ region.h5: trained model results for a region