1, Theinterrun variation () is defined as:



where  is the ROI number,  () is the value of DSI of one segmentation method on the  image segmented with the  ROI,  is the number of images and .

2, The generalized Cohen**’**s kappa () is defined as:







The interrun variation denotes the average of all DSI differences among eight different ROIs for the same segmentation method. The Cohen**’**s kappa measures the agreement among accuracies (DSI) due to the same segmentation method with different ROIs. A smaller interrun variation () and a larger Cohen**’**s kappa () indicate that the methods is more robust to the change of ROI.