

1 **Universal and stable medical images generation for tissues**
2 **segmentation (Unistable method)**

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9 **Abstract**

10 Segmentation of medical images has been one of the most important research areas
11 because of its impact in modeling and diagnosing the structure and the functions of
12 various organs. The lake of unique solution for the segmentation problem of medical
13 images is caused by the wide range of selections among different medical imaging
14 modalities and clustering methods where each setting has its own estimates for solving
15 this problem. Unistable method is a novel method that generates enhanced images with
16 high contrast which can reduce boundary-overlapping between different tissues. This is
17 accomplished by fusion of different clustering maps which are generated from selected
18 medical images using some clustering methods. The improved Unistable-Images are
19 somehow universal, where all estimates of different regular segmentation settings are
20 considered in the solution; and they are relatively stable, because results of their
21 segmentation are proved to be relatively clustering-method-independent.

23 **Keywords :** Unistable Method, Unistable Image, Brain, DTI, Segmentation, WM, GM,
24 CSF.