



Evaluation of HVS models in the application of medical quality assessment

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Résumé en anglais

In this study, four of the most widely used Human Visual System (HVS) models are applied on Magnetic Resonance (MR) images for signal detection task. Their performances are evaluated against gold standard derived from radiologists' decisions. The task-based image quality assessment requires taking into account the human perception specificities, for which various HVS models have been proposed. Few works were conducted however to evaluate and compare the suitability of these models with respect to the assessment of medical image qualities. Here we propose to score the performance of each HVS model using the AUC and its variance estimates as the figure of merit. The contribution of this work is twofold: firstly the application of MRMC (multiple-reader, multiple-case) estimates independently of the HVS model's output range, secondly the use of radiologists' consensus as gold standard so that the estimated AUC measures the distance between the HVS model and the radiologist perception.

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Liens

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=2207](http://okina.univ-angers.fr/publications?f[author]=2207)
- [2] <http://okina.univ-angers.fr/c.menard/publications>
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=2252](http://okina.univ-angers.fr/publications?f[author]=2252)
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