Reviewer’s report

Title: Comparison of measurement methods with a mixed effects procedure accounting for replicated evaluations (COM3PARE): Method comparison algorithm implementation for head and neck IGRT positional verification

Version: 2 Date: 20 October 2014

Reviewer: Aitang Xing

Reviewer’s report:

Overall comments:
The authors implemented a measurement comparison method published by their research group. The intention of this paper is to apply this method on an IGRT position verification data set used in previous paper to evaluate its feasibility and usefulness.

Specific comments:

Discretionary revision

Why used the same data set used in previous paper instead of using new dataset or adding new data to previous dataset?

Minor essential revision

1. In current and previous papers, there are no details for CBCT reconstruction resolution and registration algorithm. Was same reconstruction resolution used for all patients? What is the influence of different reconstruction resolution and algorithm on automatically derived shifts?

2. The main point of this paper is to validate the COM3PARE using the same data set used in ref 50, which was analysed using standard method. The advantage of COM3PARE over standard method was not emphasised in the paper.

Advice on publication:
It is recommended for publication after revision.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.