Supplementary material for Casares-Magaz O, et al. A method for selection of beam angles robust to intra-fractional motion in proton therapy of lung cancer. Acta Oncol 2014;53:1058–63.

Supplementary Figure 1. A CT slice through the centre of the tumour of patient 1, 2 and 3 (left to right) with the CTV outlined in the right lung.

Supplementary Figure 2. Scheme of one beam angle configuration, the proton beam shows the beam rays that are analysed to compute the final ΔWEPL (A); image of the ΔWEPL BEV map for 360° gantry angle and 0° couch angle of patient 1 (B), and the algorithm workflow to evaluate changes for all the beam angle configurations (C).

(A) Reference DVHs and Average DVHs - Patient 2 **(B)** Reference DVHs and Average DVHs - Patient 3

Supplementary Figure 3. Reference MIP DVH (black) and the average 4DCT DVH (grey) for the ITV for (A) Patient 2 and (B) Patient 3. Compared with results of patient 1 (Figure 2), patient 2 presents large variations for the average DVH, and patient 3 presents both effects of over-dosage and under-dosage for some of the analysed geometries.