Removing the front tracker pair; investigations and observations (Monte Carlo)

Jarle Rambo Sølie Bergen pCT collaboration

Proton imaging set-ups



 $D_t = 5 \ cm$ $D_p = 15 \ cm$ TPS Pencil beam: 7 mm FWHM

Monte Carlo simulations

Five proton imaging set-ups:

Double-sided ideal _ No material budget, no pixel pitch

Double-sided Phase II J

Single-sided Bergen DTC



0.4 mm silicon, 0.228 mm pixel pitch

MLP impact



Phantoms

Head phantom



Giacometti et.al. Development of a High Resolution Voxelised Head Phantom for Medical Physics Applications.

Clinical setting

CTP528 Linepair phantom



Reproduced from Catphan 412-424 and 500-600 manuals.

Spatial resolution

RSP accuracy

CTP404 Sensi-

tom phantom

Proton radiography



Proton radiography



Spatial resolution



RSP accuracy



Clinical setting (head phantom)



Thank you for your attention

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$MLP (D_p=1mm)$



Mouth profile

