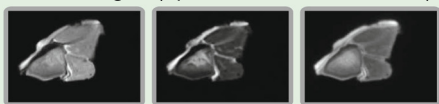


(a) data preparation

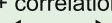
learning step:

MR images (up to 8 different contrasts)

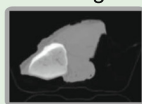


+ additional features

coregistration
+ correlation

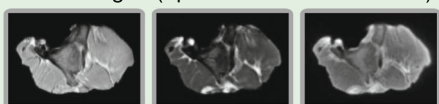


CT image



prediction step:

MR images (up to 8 different contrasts)



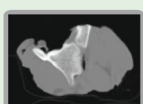
+ additional features

+

database
of decision
rules

(b) derivation of pseudo CT

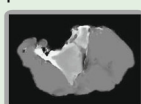
reference CT



comparison

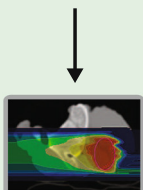


pseudo CT



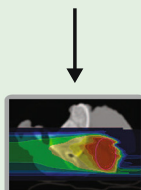
(c) **part (1)**: investigation of best combination
of contrasts and additional features

(d) **part (2)**: ion radiotherapy treatment plan simulation



plan optimization

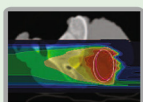
comparison



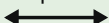
(e) **part (3)**: ion radiotherapy treatment plan adaptation

movement of target volume

no correction



comparison



new plan optimization

