

Design study of a white muon beamline at RCNP

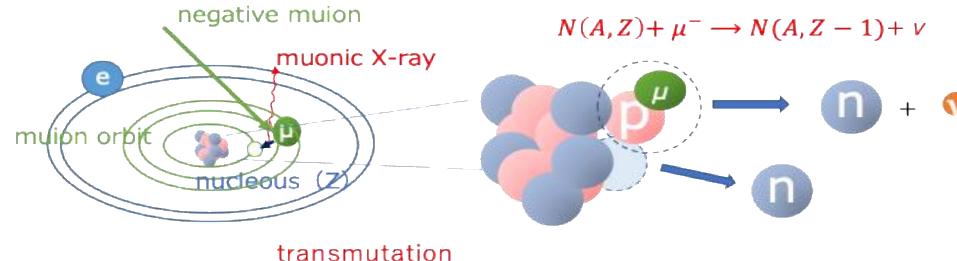
for radioisotope production via muon capture reaction

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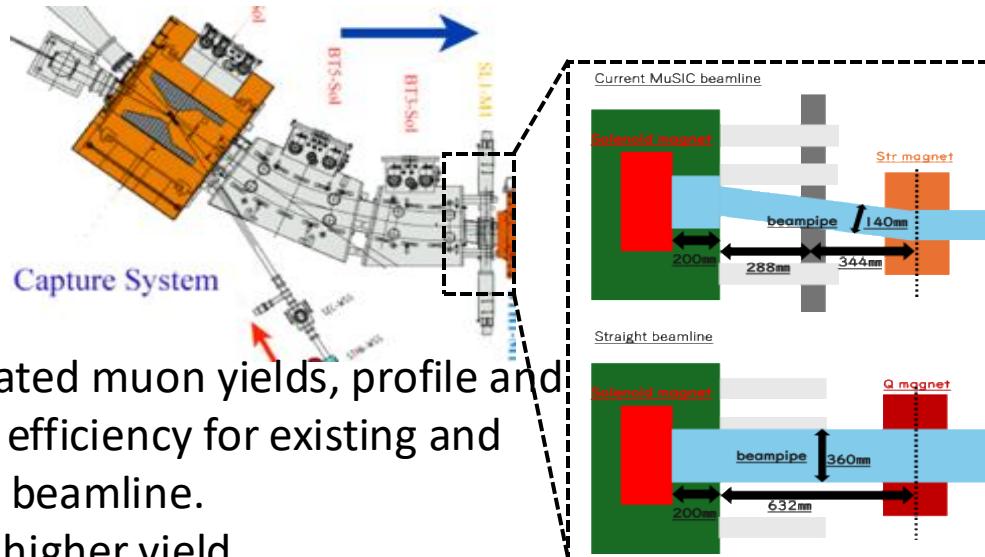
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RI production via muon capture reaction



- RI production by muon capture reactions (transmutation)
- high-intensity muon beam \rightarrow beamline improvement

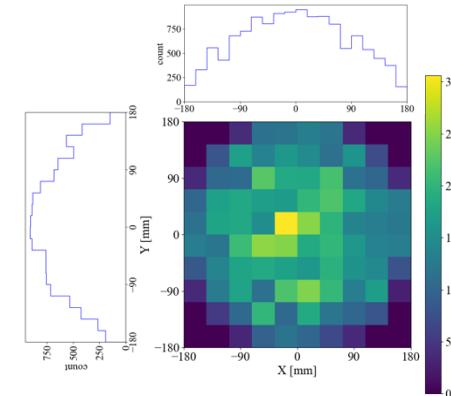
simulation



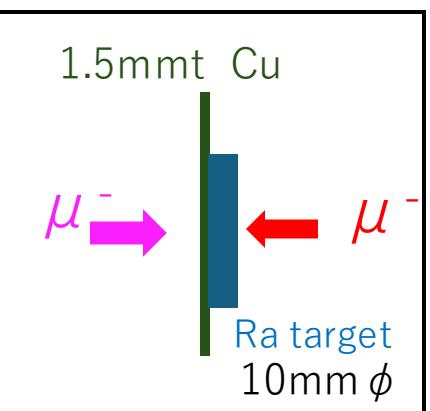
- We simulated muon yields, profile and transport efficiency for existing and improved beamline.
- 20 times higher yield.

Results

beam profile at the outlet



Assumed RI production



- Based on this distribution, we estimated RI production rate, for example, using a 10-mmφ Ra-226 target.