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Measurement of Radio-activation and Evaluation of Activated Nuclides due to Secondary Particles Produced in Stripper Foil in J-PARC RCS.

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Multi-turn charge-exchange beam injection is key technique to achieve the high intensity proton beam accelerators. In the J-PARC RCS, 400MeV H- beams from the LINAC are injected to the stripper foils so that the most of beams are converted to protons. The stripper foil is irradiated not only by the injected H- beams but also by the circulating protons. The high energy and intense beam irradiation into the foil generates secondary neutrons and protons via nuclear reactions. These secondary particles cause high residual activation around the stripper foil.
Therefore, an activation analysis method using sample pieces is considered to identify the species of the secondary particles, their energies and emission angles. In the presentation, we report the result of the evaluation of this activation analysis with PHITS codes.

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