450 mg/cm^2. The use of thicker targets does not elevate the yield, but the background from transfer reaction products raises as a square of the target thickness.

With a specially designed Monte-Carlo program for the optimization of the separator settings [6] it is possible to improve the transport efficiency up to 30%, also better background conditions can be achieved in comparison to traditional methods.

Very interesting possibilities may be realized if the first results obtained with a ^{48}Ca beam really indicate half-lives of superheavy nuclei longer than 1s. In this case quasi-on-line mass separation or chemical separation can be employed. One can win a factor of about 15 at the same beam intensity. The elevation of the projectile current in these experiments is not limited.

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MODIFICATION OF NUCLEAR LIFE-TIME

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A series of investigations were carried out for effects of the vacuum fluctuation on nuclear energy levels [1-4]. These works explored actually energy level shifts due to the vacuum fluctuation in a finite space. Can the nuclear level width be also modified? There are a few reports on spontaneous emission of Rydberg atom [5, 6] and cyclotron radiation inhibited by a cavity [7]. This paper will show the result of Moessbauer experiment on cesium-133 nucleus, decay of which is delayed by 49 percents.

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