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Project on searching for neutron-antineutron oscillation at the WWR-M reactor

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Supersource of ultracold neutrons on the basis of superfluid helium is under construction in PNPI NRC KI. It must provide UCN density 2-3 orders of magnitude higher than existing sources. For the new source we propose an experiment on search for neutron–antineutron oscillations based on the storage of ultracold neutrons in a material trap. The sensitivity of the experiment mostly depends on the trap size and the amount of UCN in it. The results of simulations of the designed experimental scheme show that the sensitivity can be increased by ~ 10–40 times compared to sensitivity of previous experiment depending on the model of neutron reflection from walls.

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