Experiment on a search for effects of polarized strangeness in nucleons in production of vector mesons at threshold

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Physical motivation of experiments proposed for proton and deuteron extracted beams of the Nuclotron will be discussed. The main goal of the project is a study of vector mesons (ϕ and ω) production in pp and np interactions near thresholds to search for effects of nucleon polarized strangeness. Observation of the large apparent violation of the OZI rule will be a strong evidence for the presence of a polarized strangeness sea in the nucleon. The hypothesis of a hidden polarized strangeness in the nucleon gives quite definite predictions for them which differ from those of models based on the meson exchange picture. But these alternatives have also big uncertainties due to the lack of the relevant experimental data. This deficite will be closed by the present project.

The experiments can be carried out at the JINR accelerator Nuclotron. The concept of the setup will be briefly discussed as well.