



Семинар
«МАЛОЧАСТИЧНЫЕ СИСТЕМЫ»
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**EFFECTIVE RANGE APPROXIMATION
IN THE PROBLEM OF TWO-DIMENSIONAL SCATTERING
BY A CENTRAL SHORT-RANGE POTENTIAL**

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The nonlinear version of the variable phase approach is extended to the case of scattering of a quantum particle by a central short-range potential in the two-dimensional plane. Definitions of the effective range function, scattering length and effective radius are proposed and discussed. The low-energy approximations for the partial scattering phase shifts, cross-sections and radial wave-functions are derived and analyzed. A particular attention is paid to the concepts of the action radius of interaction and the scattering length.