

ON THE POSSIBILITY OF “DRY” FRICTION  
IN SUPERFLUID He<sup>4</sup>

*M.D. Tomchenko*

Bogolyubov Institute for Theoretical Physics,  
Nat. Acad. of Sci. of Ukraine  
(14b, Metrolohichna Str., Kyiv 03680, Ukraine;  
e-mail: [mtomchenko@bitp.kiev.ua](mailto:mtomchenko@bitp.kiev.ua))

S u m m a r y

A possible microscopic explanation for the exhaustion of  $\rho_s$  in helium-II at the wall at  $T > T_c \simeq 0.5 \div 1$  K has been proposed, and a possibility for the “dry” friction to exist in He-II at  $T \leq T_c$  has been predicted. Both effects are related to the fact that the energy of 2D-rotons is lower by 2 K than that of 3D-rotons, so that the wall is a potential well for the latter.