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Addendum to "On the Transition from Potential Flow to Turbulence …" by M. Niemetz, R. Hänninen, and W. Schoepe, J. Low Temp. Phys. 187, 195 (2017)

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It should be mentioned that an interesting conclusion can be drawn from a comparison of the normalized mean lifetimes of the turbulent phases τ^* in Eq. (27)

$$\tau^* = \exp(n^2), \tag{1}$$

where n is the number of vortex rings that are shed from the oscillating sphere during one half-period, and in Eq. (30):

$$\tau^* = \exp[(c\, Re_s)^2], \tag{2}$$

where $c = 1.04$ and Re_s is the superfluid Reynolds number. The accuracy of c is determined by the accuracy of several numerical factors in Eq. (26) and is estimated to be about 10%. That means within our accuracy we may as well set $c = 1$. Hence, the conclusion is:

$$Re_s = n. \tag{3}$$

That means, in our experiment the superfluid Reynolds number is given simply by the number of vortex rings that are shed from the sphere in one half-period of oscillation. This is a surprisingly simple result. In a much different context, an equally simple result for Re_s has been obtained theoretically in 2D superfluid turbulence in a recent work by Reeves et al. Phys. Rev. Lett. **119**, 184502 (2017).

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