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I knew that it had been a while since I last posted, but it was quite a shock to see that I’ve only posted once this year. Partly, this is because it is difficult to break out from my commitment to working on the book (see previous blog), but another factor is the fear that I might already have posted on the same topic. And given how many blogs that I have now posted over the last few years, it can be quite daunting to carry out a check in order to make sure that I’m not repeating myself, as it were.

In recent years, I’ve often seen article titles that refer to “Kolmogorov” Cascades. I find this strange because the original idea was due to Richardson, and was acknowledged by Kolmogorov in 1962, although not in his original works of 1941. The plural of cascade also seems rather strange, in view of the fact that there is supposed to be only one mechanism and that this leads to universal behaviour.

The actual term “cascade” was first used in 1945 by Onsager, who developed the idea; and who formulated it in a more quantitative way by working in spectral wavenumber space. This work has been enormously influential in the statistical theory community, although curiously never acknowledged as being due to Onsager. It is invariably attributed to Kolmogorov. It was used as a formal concept and credited to Onsager by Corrsin [1] in 1964, in an application to engineering modelling. It was not until 2006 that the review by Eyink and Sreenivasan [2] brought it to the general attention of the turbulence community.

I think that it should be called the Richardson-Kolmogorov-Onsager cascade, but that seems rather a mouthful. Perhaps we should call it the RKO Cascade? There was once a major film

production company of that name, in the golden age of Hollywood. But it now seems to be more or less forgotten. And when I googled the name, it seemed only to be used by a professional wrestler in the USA. So, I think we could safely use it.

[1] S. Corrsin. Further Generalization of Onsager's Cascade Model for Turbulent Spectra. Phys. Fluids, 7:1156–1159, 1964.
[2] G. L. Eyink and K. R. Sreenivasan. Onsager and the Theory of Hydrodynamic Turbulence. Rev. Mod. Phys., 87:78, 2006.