

About

This blog is intended for those who study fluid turbulence and for those in related disciplines who are interested in the subject. It is concerned exclusively with fundamentals, which is why I refer to the *physics* of turbulence. Its informal style is intended to make it accessible to researchers from a wide range of backgrounds, but it is *not* intended as a popular-level treatment.

Actually I believe that it is this diverse nature of the turbulence community that needs to be addressed, almost as much as the subject itself. Indeed, in my view, this is so important that it is worth spelling out (although many might think it obvious). In its earlier years, turbulence research was dominated by engineers and applied mathematicians, with the development of applications going hand in hand with the establishment of fundamentals. However, over recent decades, turbulence research has expanded enormously (like all of science) and now there are large numbers of applied scientists studying applications which are industrial, aeronautical, medical, meteorological, and much more besides. In contrast, the study of fundamentals seems to have taken a back seat, to the point where some active researchers appear to be actually hostile to any consideration of fundamentals. Their attitude might appear reasonable, were the fundamental aspects a matter which could safely be left to the textbooks; and of course this is the case for much fundamental material. But it overlooks the fact that there are basic issues that remain unresolved over time-scales of half a century or more.

These are rather sweeping statements, and I shall rely on individual blogs to give actual examples that justify them. However, as someone who has worked in both engineering and physics departments, I should be in a position to appreciate the differences between applied and pure scientists. By that I mean the different *cultures*, using culture in the sense of

what is thought to be 'natural' or 'appropriate' or even 'right' when doing research. And indeed I can. In my experience, engineers have a tendency to regard physicists as *frivolous* in their choice of research topics; whereas, physicists regard engineers as being rather *dirigiste* in the way they conduct research. As a physicist, I have to confess to being more sympathetic to the latter perception, because it is a fact that I have had to live with for many years. (In every three referees there will be one who requires the paper to be rewritten in their own style!)

This page is merely a matter of setting the scene. I hope that the blogs will allow me to make concise points which will help with bridging the gap, particularly in the topic of renormalization methods, where intimidatingly large amounts of difficult mathematics stand in the way of obtaining an understanding. Also, I hope to rattle the bars of a few cages. And why not? Turbulence needs to be stirred up.