June 11, 1980

Dear Bill,

Your remarks about Wightman's introduction to Israel's book aroused my interest, and so I picked it up together with Thompson's book, about which you were less flattering, before I left Princeton. I have been looking at both and learning a great deal, or so I thought at first. Thompson in particular seems to bring two rather grand mathematical problems into focus, that of passing from the partition function to phase-transition points and that of commuting phase transitions to degree of statistical correlation.

But my next step was too presumptuous. I went to the book of Toulouse-Pfeuty on the renormalization group. The first chapter was great, Dynamical systems appear, and I recalled that there had been attempts to apply these ideas in statistical mechanics to turbulence, and with some success, and that in addition there were attempts (Lorenz eq'n) to find dynamical systems which manifested some form of turbulence, and the grand prospect of learning about all these things at once and understanding their commution opened up before me.

But I bogged down in the second chapter, which is simply too laconic for me, and I have to fill in a good deal of background if I am to pass from your bedtime reading to the real thing. I don't know if it's even possible. But if you have any ...

Only the first page of this letter from Robert Langlands to William Casselman is available.

Compiled on May 7, 2024.