Topic 8 – Spinors II

Pre-Lecture Reading/Post-Lecture Summary

This will be kewl.

Today we will continue our development of spinors in relativity by considering the Lie algebra associated with SO(1,3). By rewriting the generators into complex linear combinations, we will be able to a complete decomposition of the algebra into two independent parts. In addition, we will immediately see how spinors will arise in the four dimensional context. We will study the transformation properties of these spinors and in doing so unearth the Dirac matrices. I will do my best to sort out one of the more confusing parts of working in 4D, that is that just like vectors, spinors also have four components, though there is no direct correlation between the components of a spinor and vector components (which are themselves tied directly to coordinates). Then you will leave and be happy.