Questions

1. Are either the boosts or the rotations an invariant subgroup of the Lorentz group?

2. For that matter, are the boosts even a subgroup?

3. Does the Poincare group have any invariant subgroups?

4. Since the rotations are a subgroup of the Lorentz group, an irreducible representation of the Lorentz group gives a representation of the rotation subgroup. Is it reducible?

5. What is the SO(3) decomposition of A_μ ?
   Of $F_{\mu\nu}$ (antisymmetric in μ and ν)?
   How does this affect the quantization of the EM field?

6. In the notation (j_-, j_+), what is a Dirac spinor?

7. Is there a *proper* Lorentz transformation that connects electrons with positive and negative helicity?