

- **Bootstraps and extraordinary invariants in BRST cohomology**
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BRST Cohomology of free massless theories gives rise to ‘Extraordinary Invariants’. So free theories ‘know about’ their possible interacting versions, in a way that is a kind of ‘soft bootstrap’. Free gauge theory bootstraps to Yang-Mills. For SUSY the free theory bootstraps to the SSM, and also to related Infinite Towers of higher spin Leptons, Quarks and Gauge/Higgs particles. This implies a natural mechanism for spontaneous gauge symmetry breaking accompanied by a very special non-spontaneous and explicit SUSY breaking. However, the SUSY breaking is certainly afflicted with terrible troubles such as Tachyons and Ghosts. Whether these are solvable remains to be seen, but now the full action (for Leptons and Quarks) is available for inspection.