Contribution ID: **292** Type: **not specified**

# Electroweak baryogenesis and gravitational waves in a composite Higgs model with high dimensional fermion representations

*Thursday, 26 August 2021 22:35 (20 minutes)*

We study electroweak baryogenesis in the SO(6)/SO(5) composite Higgs model with the third generation quarks being embedded in the 20′ representation of SO(6). The scalar sector contains one Higgs doublet and one real singlet, and their potential is given by the Coleman-Weinberg potential evaluated from the form factors of the lightest vector and fermion resonances. We show that the resonance masses at O(1 ~ 10 TeV) can generate a potential that triggers the strong first-order electroweak phase transition (SFOEWPT). The CP violating phase arising from the dimension-6 operator in the top sector is sufficient to yield the observed baryon asymmetry of the universe. The SFOEWPT parameter space is detectable at the future space-based detectors.

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**Session Classification:** Theories of New Strong Dynamics

**Track Classification:** Theories of New Strong Dynamics