

In this talk, I will discuss the effect of a large-scale background hypermagnetic field on the electroweak phase transition. By proposing an effective weak angle which is varying during the electroweak phase transition, I show that for a strong enough hypermagnetic field the phase transition occurs in two steps and becomes first-order. I discuss about all of the important quantities characterizing the details of the phase transition, including the phase transition latent heat, temperature and duration. I then talk about one of the consequences of this model which is the generation of gravitational waves and show that for strong enough background hypermagnetic fields, the gravitational waves generated during the first-order electroweak phase transition can be detected by the Ultimate-DECIGO and BBO correlated interferometers.