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The production of multiple leptons due to heavy bosons at the Large Hadron Collider

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Abstract content (Max 300 words) **Formatting & Special chars**

We are investigating the implications of the presence of heavy neutral, H , A , and charged bosons, H^{\pm} , in terms of the production of multiple leptons in proton proton collisions at the Large Hadron Collider. Due to the conservation of gauge invariance it is postulated that the heavy scalar, H , decays into an intermediate lighter scalar, S , and the Higgs boson, h with the decays $H \rightarrow SS, Sh$. The scalar S is assumed to decay into a pair of dark matter particles and pairs of SM particles. One of the most prominent decays would be $S \rightarrow WW^{(*)}$, leading to the production of leptons. In addition, the decays $A \rightarrow ZH$ and $H^{\pm} \rightarrow W^{\pm} H$ are allowed yielding multiple lepton final states, as well. The final states in interest and the distinct kinematic features will be summarised.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

MSc

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

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Yes.

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