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Tracking with object condensation

We investigate the application of object condensation to particle tracking at the LHC. Designed having in mind calorimeter clustering and successfully employed on high-granularity calorimeter reconstruction for HL-LHC, object condensation is a generic clustering methods that could be applied to many problems within and outside HEP. Using the TrackML challenge dataset, we train a tracking algorithm based on object condensation and present results for events of increasing complexity.

Significance

Being entirely based on a differentiable algorithm, tracking based on this algorithm could come with advantages in terms of speed up and resource exploitation of parallel architectures that could become the standard by HL-LHC

References

<https://arxiv.org/abs/2002.03605>

<https://arxiv.org/abs/2106.01832>

Speaker time zone

Compatible with Europe

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