

## **Problems with unstable particles in high energy processes**

*Wednesday 23 May 2018 17:30 (20 minutes)*

3 topics appeared in the description of processes with unstable particles. 1. Plane wave formalism is insufficient for some realistic problems. The wave packets formalism become necessary. Illustration: The  $t$ -channel singularity in small angle scattering. 2. Perturbation series become invalid like in the case of infrared divergence in QED, but in more strong form. Illustration: The  $s$ -channel singularity near the threshold. 3. Theory with unstable fundamental particles don't allow conditions for construction of perturbation diagrammatic expansion. Signature: Gauge dependence in the description of observable processes in higher orders

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**Session Classification:** Parallel Session on Collider Searches