Parallelizable Track Pattern Recognition in HL-LHC

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1. P_T modules in CMS Phase 2 tracker enables parallel algorithm in outer tracker

2. Mini-doublelets can be built in parallel
   - Hit found in search window
   - Hit NOT found in search window
   - high P_T pass
   - low P_T fail
   - "Stubs / Mini-doublelets" ( )

3. Illustration of parallel segment building/linking and its benefits
   - Only need to know nearest neighbor when linking
   - Shared mini-doublet linking
   - Displaced interaction
   - Not dependent on inner tracker

4. Segments can be linked geometrically
   - Good linking
   - Fails geom. constraint in
   - compatible modules based on module map

5. non-exhaustive list of possible track candidates shown below
   - Can link across missing hits
   - Can allow missing hits
   - If available, can easily add pixel seeds as "segments"

6. Algorithmic efficiency of built track candidates of no missing hit tracks
   - Muon gun
   - m from PU 200 tt events
   - e from PU 200 tt events

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