

| Triggered signature              | Trigger description                                                                                                                                                                                                                                                                                                                                                                                                           | HLT rate [Hz] |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Disappearing track               | $p_T^{\text{miss}} > 105 \text{ GeV} + \geq 1 \text{ isolated track } (p_T > 50 \text{ GeV})$                                                                                                                                                                                                                                                                                                                                 | 4             |
| Disp. tau                        | $\geq 2 \text{ disp. } \tau_h (p_T > 32 \text{ GeV}, d_0 > 0.005 \text{ cm})^\dagger$<br>$\geq 1 \text{ disp. } \tau_h (p_T > 24 \text{ GeV}) + \geq 1 \mu (p_T > 24 \text{ GeV})^\dagger$<br>$\geq 1 \text{ disp. } \tau_h (p_T > 34 \text{ GeV}) + \geq 1 e (p_T > 34 \text{ GeV})^\dagger$                                                                                                                                 | 36            |
| Disp. jet                        | $\geq 2 \text{ jet } (p_T > 40 \text{ GeV}, \text{ inclusive tagging req.}) + H_T > 430 \text{ GeV}$<br>$\geq 2 \text{ jet } (p_T > 40 \text{ GeV}, \text{ disp. tagging req.})$<br>$+ H_T > 240 \text{ GeV} + \geq 1 \text{ L1 } \mu (p_T > 6 \text{ GeV})$                                                                                                                                                                  | 53 (163)      |
| HCAL-based disp. and delayed jet | $\geq 2 \text{ jet } (p_T > 40 \text{ GeV}, \text{ displ. tagging req.}) + H_T > 170 \text{ GeV}^\dagger$<br>$\geq 2 \text{ jet } (p_T > 40 \text{ GeV}, \text{ inclusive. tagging req.}) + H_T > 200 \text{ GeV}^\dagger$<br>$\geq 1 \text{ jet } (p_T > 60 \text{ GeV}, \text{ neutral hadron energy fraction } > 0.7) + H_T > 200 \text{ GeV}^\dagger$                                                                     | 35            |
| ECAL-based delayed jet           | $\geq 1 \text{ inclusive and trackless jet}^\dagger$                                                                                                                                                                                                                                                                                                                                                                          | 37 (77)       |
| Delayed diphoton                 | $\geq 2 \text{ ECAL superclusters } (\text{time} > 1 \text{ ns})^\dagger$                                                                                                                                                                                                                                                                                                                                                     | 15            |
| Disp. photon + $H_T$             | $\geq 1 \gamma (p_T > 60 \text{ GeV}) + \text{PF } H_T > 350 \text{ GeV}$                                                                                                                                                                                                                                                                                                                                                     | 12            |
| Disp. single and dimuon          | $\geq 2 \text{ L2 } \mu (p_T > 10 \text{ GeV}, d_0 > 1 \text{ cm})^\dagger$<br>$\geq 2 \text{ L3 } \mu (p_T > 16, 10 \text{ GeV}, d_0 > 0.01 \text{ cm})^\dagger$<br>$\geq 2 \text{ L2 } \mu (p_T > 23 \text{ GeV})$<br>$\geq 1 \text{ L2 } \mu (p_T > 50 \text{ GeV}, d_0 > 1 \text{ cm})^\dagger$<br>$\geq 1 \text{ L3 } \mu (p_T > 30 \text{ GeV}, d_0 > 0.01 \text{ cm})^\dagger$                                         | 165           |
| Double disp. L3 muon             | $\geq 2 \text{ L3 } \mu (p_T > 43 \text{ GeV})$                                                                                                                                                                                                                                                                                                                                                                               | 2             |
| Disp. L3 muon+photon             | $\geq 1 \text{ L3 } \mu (p_T > 43 \text{ GeV}) + \gamma (p_T > 43 \text{ GeV})$<br>$\geq 1 \text{ L3 } \mu (p_T > 38 \text{ GeV}, d_0 > 1 \text{ cm}) + \gamma (p_T > 38 \text{ GeV})$                                                                                                                                                                                                                                        | 5             |
| Dimuon scouting                  | $\geq 2 \text{ scouting } \mu (p_T > 3 \text{ GeV})$                                                                                                                                                                                                                                                                                                                                                                          | 4200          |
| MDS in CSCs                      | $\geq 1 \text{ CSC cluster } (\geq 200/500 \text{ hits in outer/inner rings})^\dagger$<br>$\geq 2 \text{ CSC clusters } (\geq 75 \text{ hits})^\dagger$                                                                                                                                                                                                                                                                       | 14            |
| MDS in CSCs + X                  | $\geq 1 \text{ CSC cluster } (\geq 100 \text{ hits}) + \geq 1 e (p_T > 5 \text{ GeV})^\dagger$<br>$\geq 1 \text{ CSC cluster } (\geq 100 \text{ hits}) + \geq 1 \text{ L3 } \mu (p_T > 5 \text{ GeV})^\dagger$<br>$\geq 1 \text{ CSC cluster } (\geq 100 \text{ hits}) + \geq 1 \tau_h (p_T > 10 \text{ GeV})^\dagger$<br>$\geq 1 \text{ CSC cluster } (\geq 50 \text{ hits}) + \geq 1 \gamma (p_T > 20 \text{ GeV})^\dagger$ | 14            |
| MDS in DTs                       | $\text{L1 } p_T^{\text{miss}} > 150 \text{ GeV} + \geq 1 \text{ DT cluster } (\geq 50 \text{ hits})^\dagger$<br>$\geq 1 \text{ L1 CSC cluster} + \geq 1 \text{ DT cluster } (\geq 50 \text{ hits})^\dagger$                                                                                                                                                                                                                   | 9             |
| Jet No-BPTX                      | $\geq 1 \text{ out-of-time jet } (E > 60 \text{ GeV})$                                                                                                                                                                                                                                                                                                                                                                        | 1             |
| Muon No-BPTX                     | $\geq 1 \text{ out-of-time L2 } \mu (p_T > 40 \text{ GeV})$                                                                                                                                                                                                                                                                                                                                                                   | 7             |