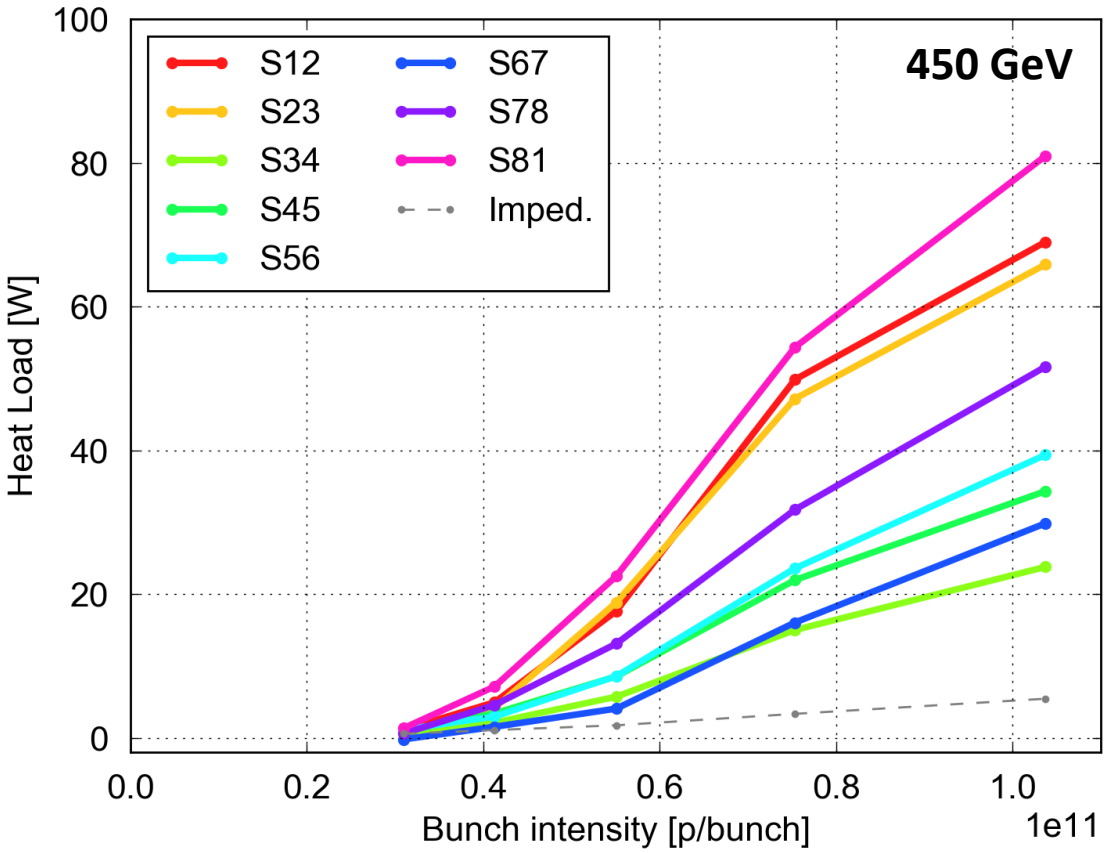
# MD4203: Electron cloud with high intensity 12b trains

- Dependence of **heat load on bunch intensity** measured with trains of 3x48b in previous MD blocks
  - Important for **HL-LHC** to know how the curve extends for **larger bunch intensity** → not possible with long trains before LS2 (SPS power limitations)
  - Trains of **12b** with intensity up to **2e11 p/bunch** available from the injectors

    → Can be used to explore larger bunch intensities



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- The goal of the MD is to measure the heat load dependence on the bunch intensity at **injection energy** in the range 1.1-2.0 x $10^{11}$ p/bunch

- Beams to be prepared in the injectors:
  - Pattern: **4x12b**, 25 ns
  - Intensities: **2.0, 1.8, 1.6, 1.4, 1.2, 1.0, 0.8 x $10^{11}$ p/bunch**

- For each intensity we will:
  - Fill the LHC with **~1000b** with a selected bunch intensity
  - Measure heat loads for 30 mins

- Time required: **16h**

- Other requirements:
  - **ADT** settings for high bunch intensity (should be already available)
  - **RF voltage** at injection set to **6 MV**

- **Octupoles**, **chromaticity** and **tunes** might need to be optimized