Beam Test: Status & Plans

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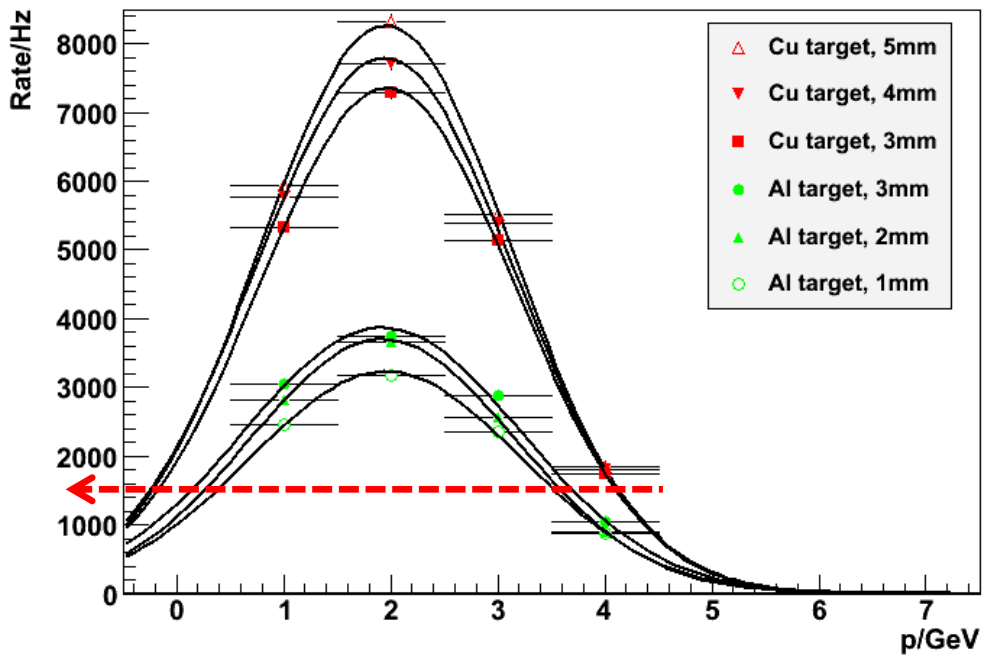
General info

- Test beam period: 6th – 13th May 2013
  - Additional time as parasitic users on FE-I4 Bonn week
- DESY beam line 21 in Experimental Hall 2
- DATURA telescope

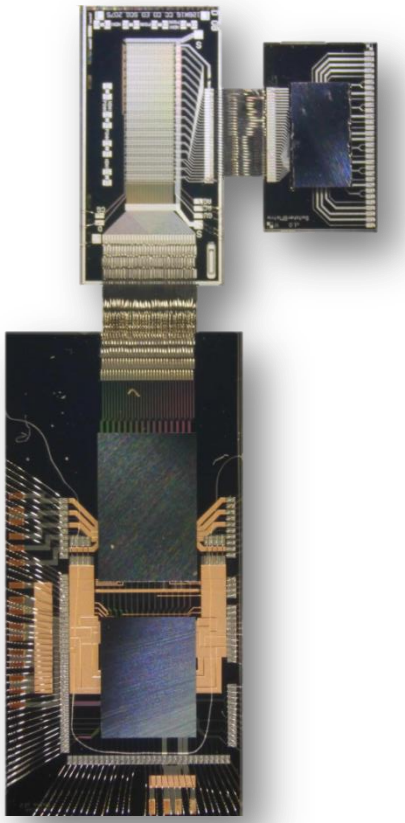
Maximum trigger rate limited by the telescope



Hardware description

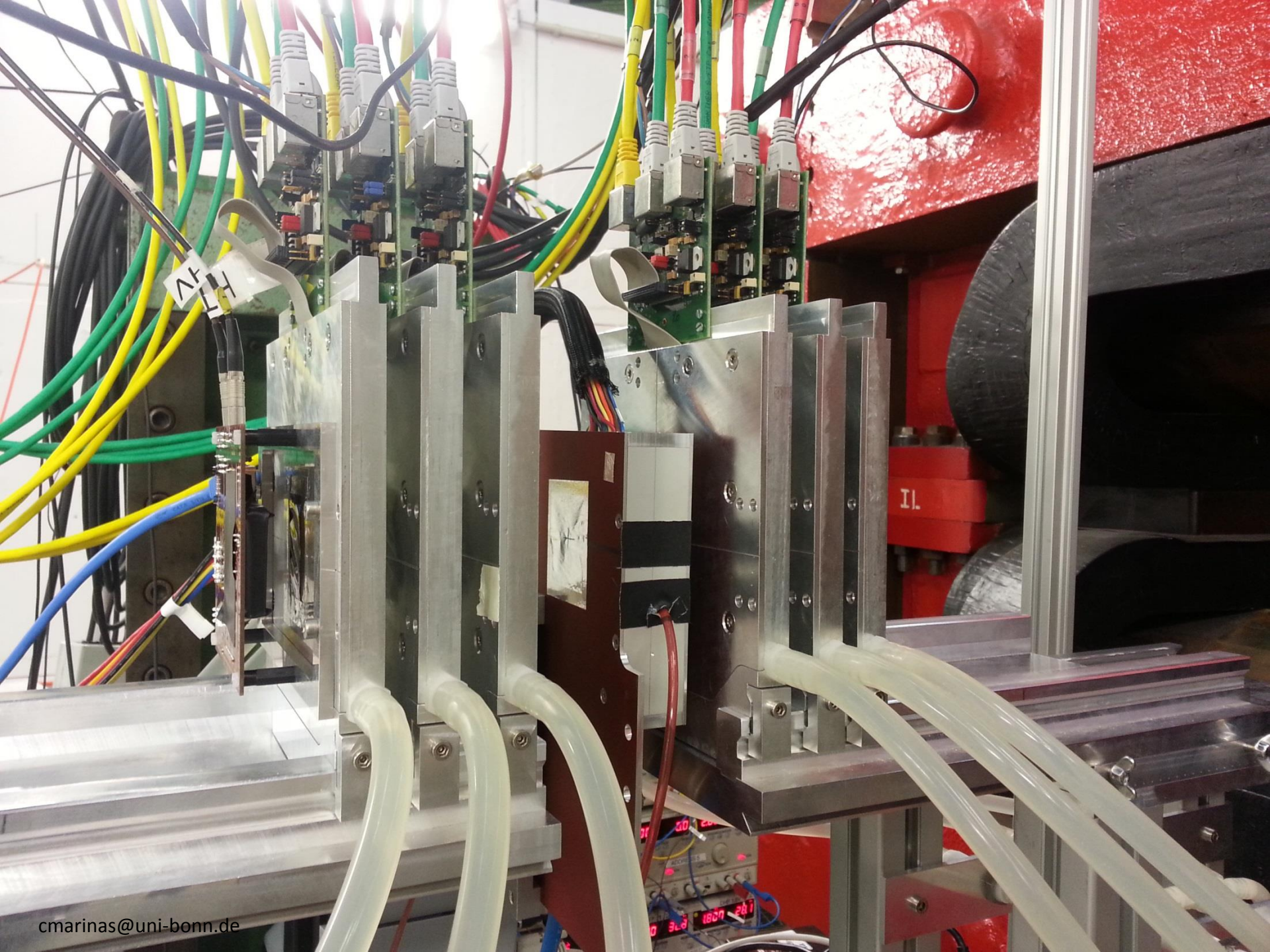
- H.5.0.03
  - PXD6+SwitcherB+DCDBv2+DHP0.2
  - DHH emulator and DHH+ONSEN readout
  - Bench power supplies
  - Active cooling

- H.4.1.11
  - PXD6+SwitcherB+DCDBv2+DCDr/o
  - Belle II prototype power supply



Detailed system description:

http://twiki.hll.mpg.de/twiki/bin/view/DepfetInternal/TestBeam2013-5



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Physics program

- Hybrid 5.0 and DHH Emulator standalone
  - Trigger rate scan
- Telescope run with Hybrid 5.0 and DHH Emulator
  - Energy scan
  - Alignment run and shower with Al plate
  - Zero Suppression cut scan
- Hybrid 5.0 and DHH+ONSEN standalone
  - Trigger rate scan
- **Telescope run with Hybrid 5.0 and DHH+ONSEN**
  - High statistics
- **Telescope run with Hybrid 4.1**
  - High statistics at 100 MHz and 320 MHz
  - Angular scan

System integration

	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21
Hybrid 5.0 + DHHe						
DHH						
ONSEN						
Bonn Tutorial						
H.5.0 in TB21						
H.4.1 in TB21						

Integration stage by stage, adding complexity to a *well* understood system

Permanent site (Bonn) with visits from experts from DHH and ONSEN

Operational experience

- Besides the integration effort, it took 5 days with all the experts sitting together to have the DAQ running during the test beam
  → Extremely complex system, plenty of small issues

- System non user friendly and lack of automation

- DESY: Very reliable machine operation.

- Friendly and collaborative working environment

- Control room overcrowded with PXD experts only (combined TB?)

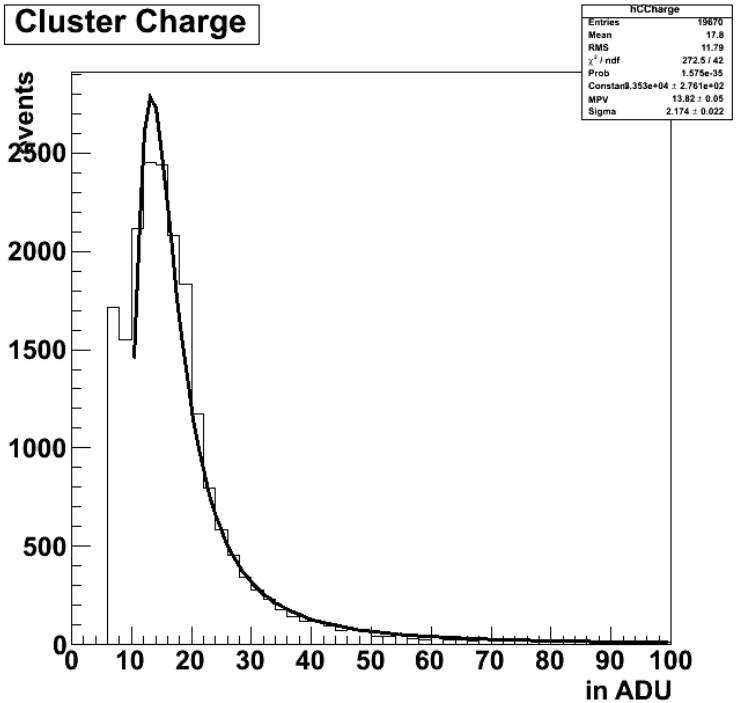
Control room: Expectation…

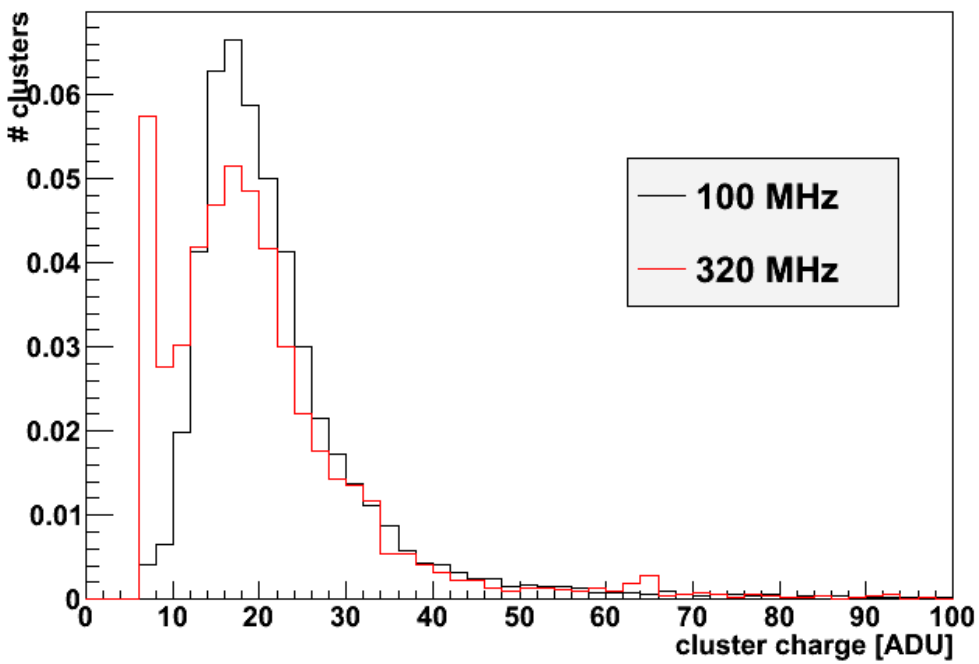
Control room: Expectation… meets Reality

Carefully think in the space allocation for VXD TB

In short

The May TB is a big step forward towards our final goal





H.5.0.03
PXD6+DCDv2+DHP0.2+DHH+ONSEN
Landau fit to cluster charge
→ Full chain working

H.4.1.11
PXD6+DCDv2+DCDr/o
Landau fit to cluster charge
→ No charge loss at full speed

BUT still many loose ends

Future plans

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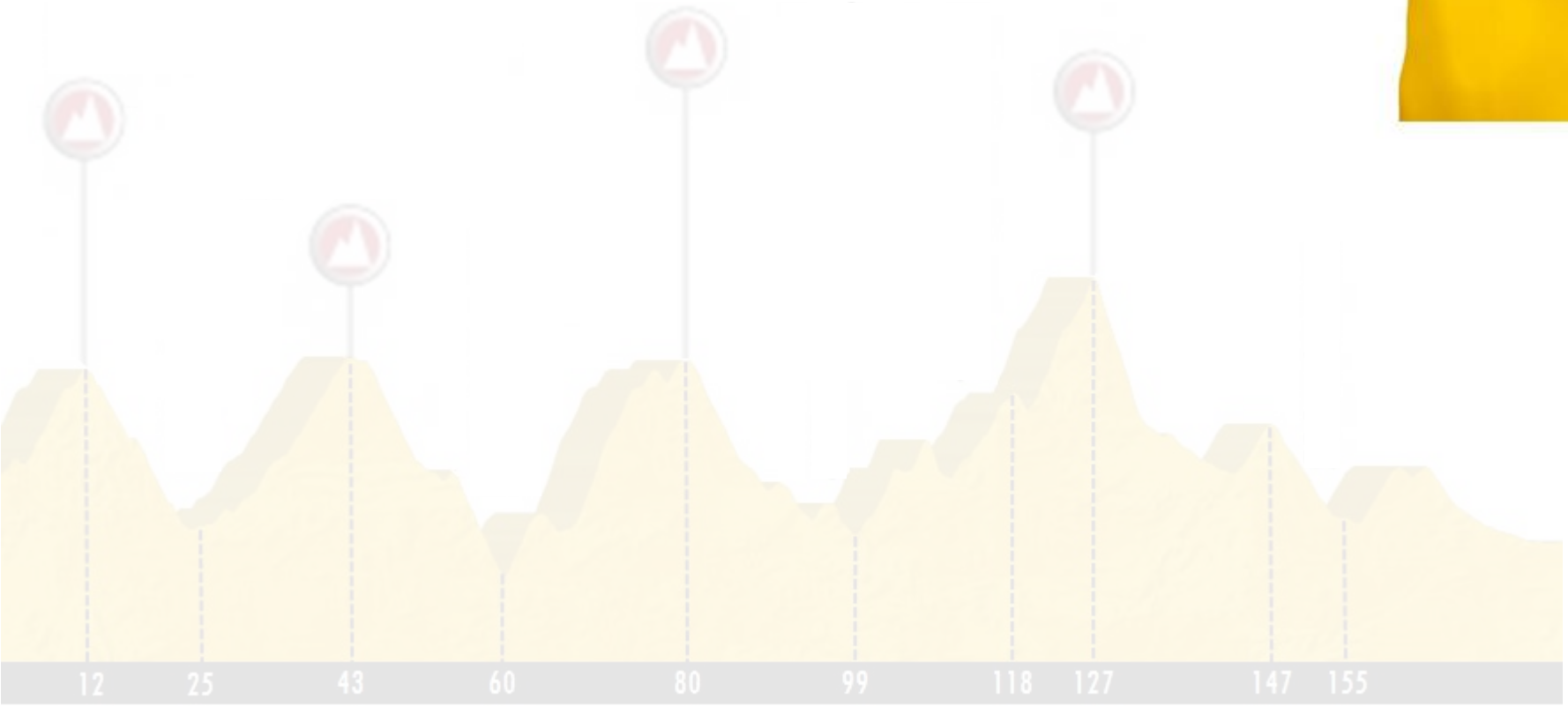
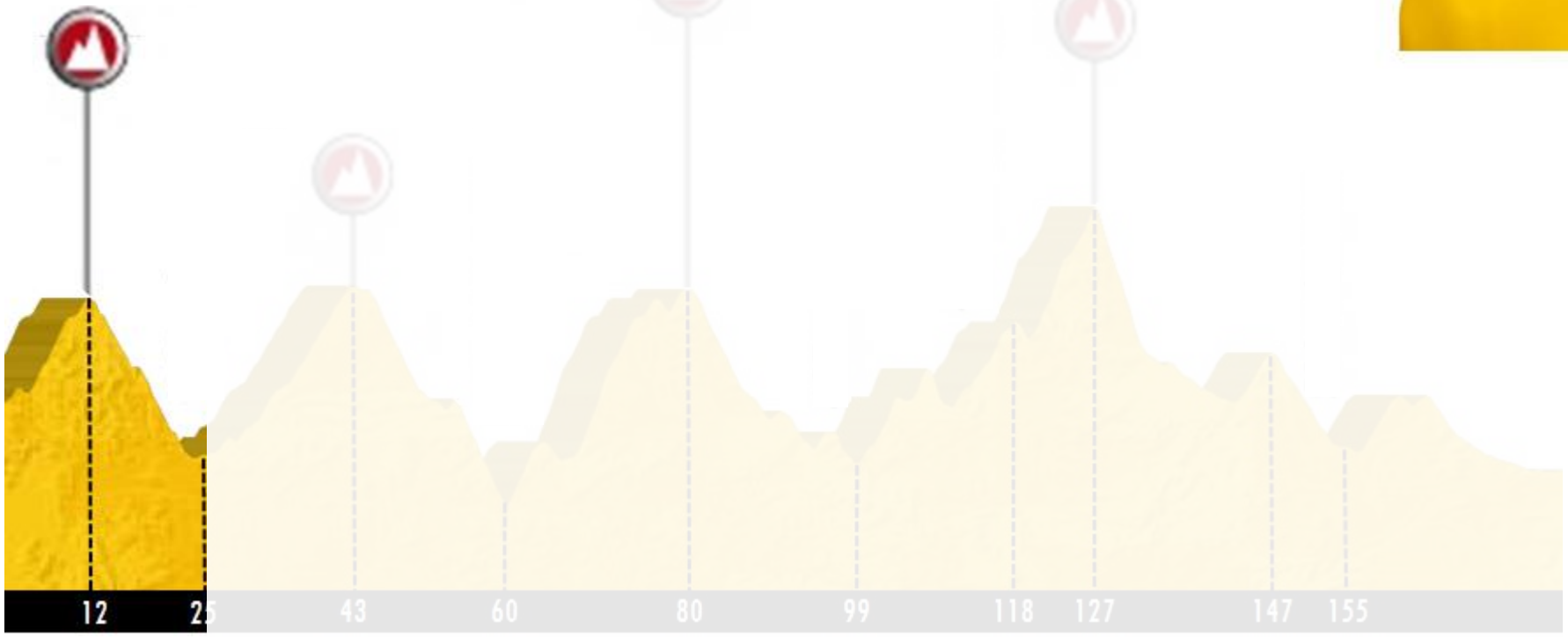
Le Tour du Deffet



Le Tour du Deffet

Peyresourde
Hybrid 4.1



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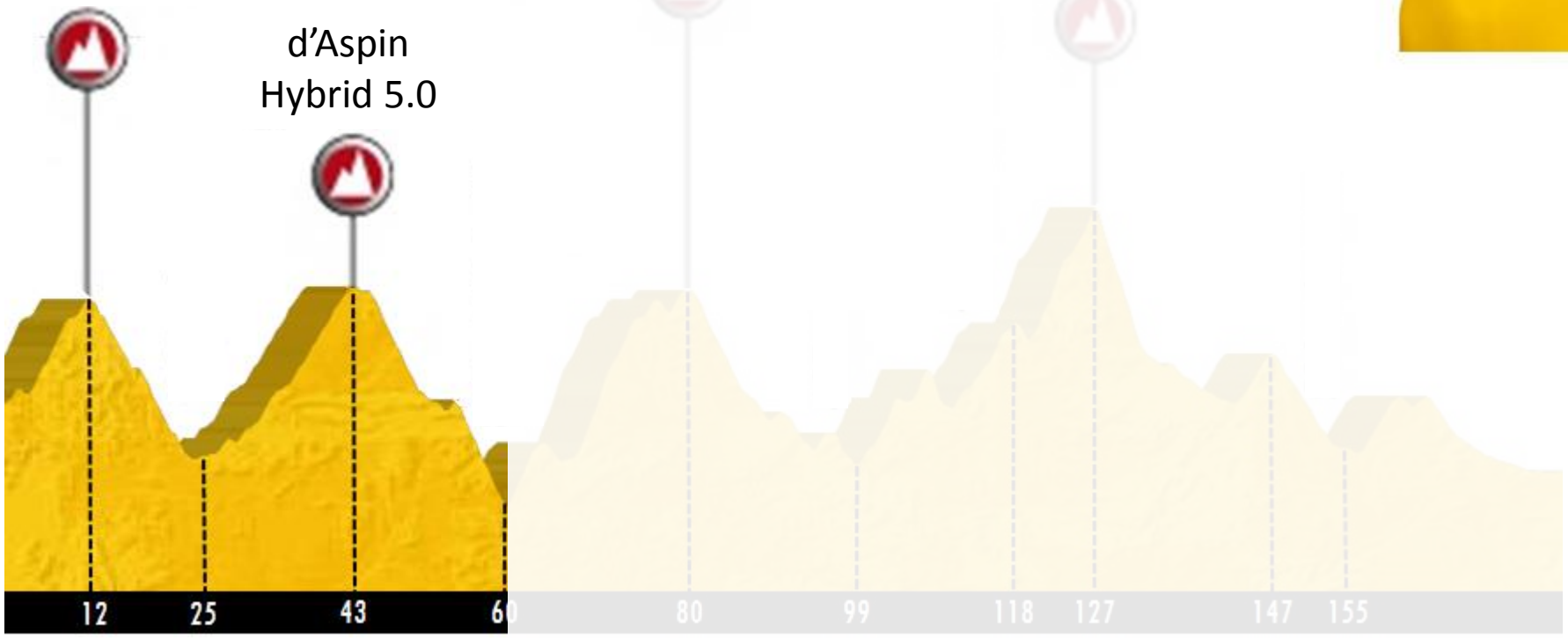
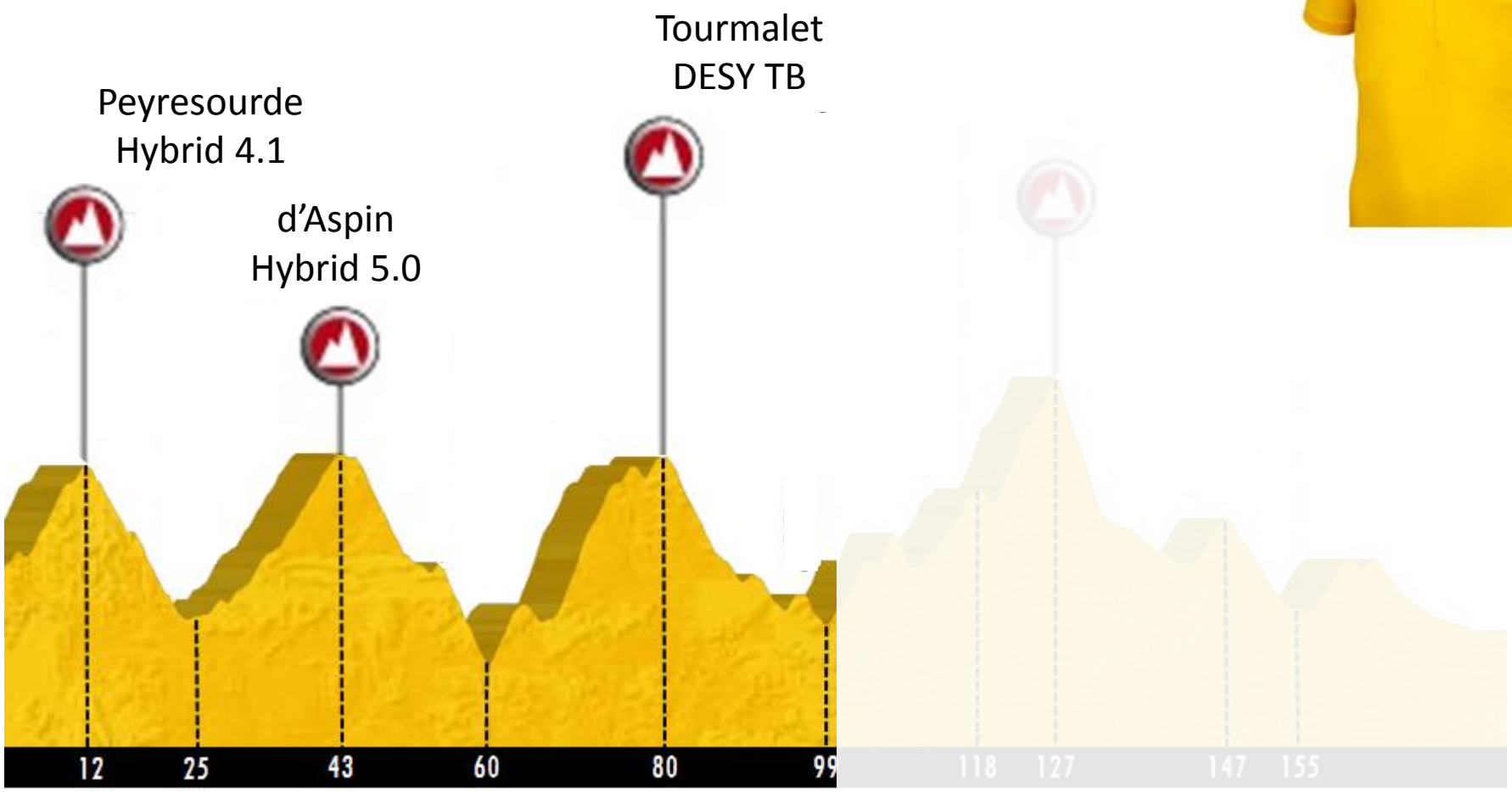
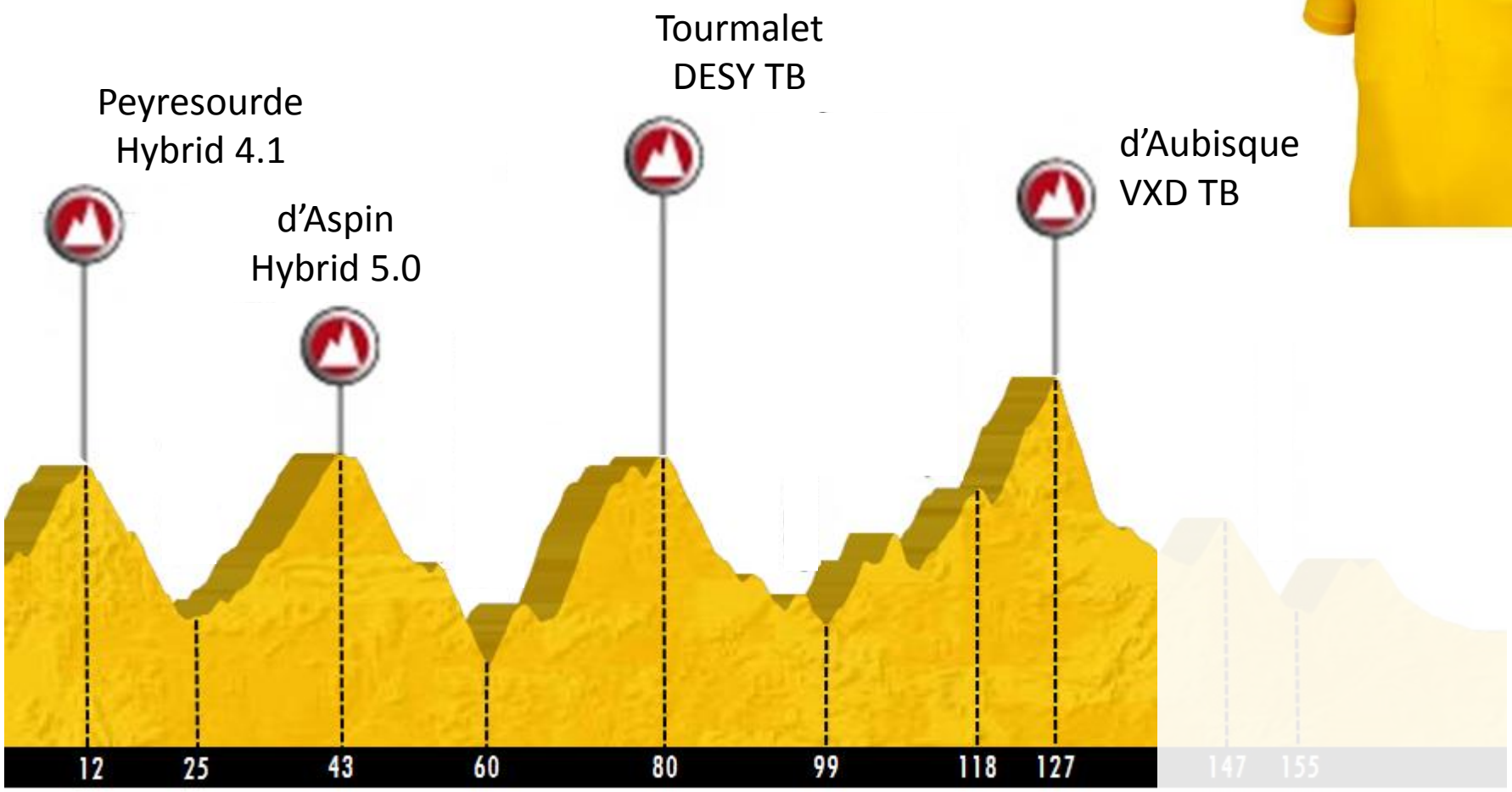
Le Tour du Deffet



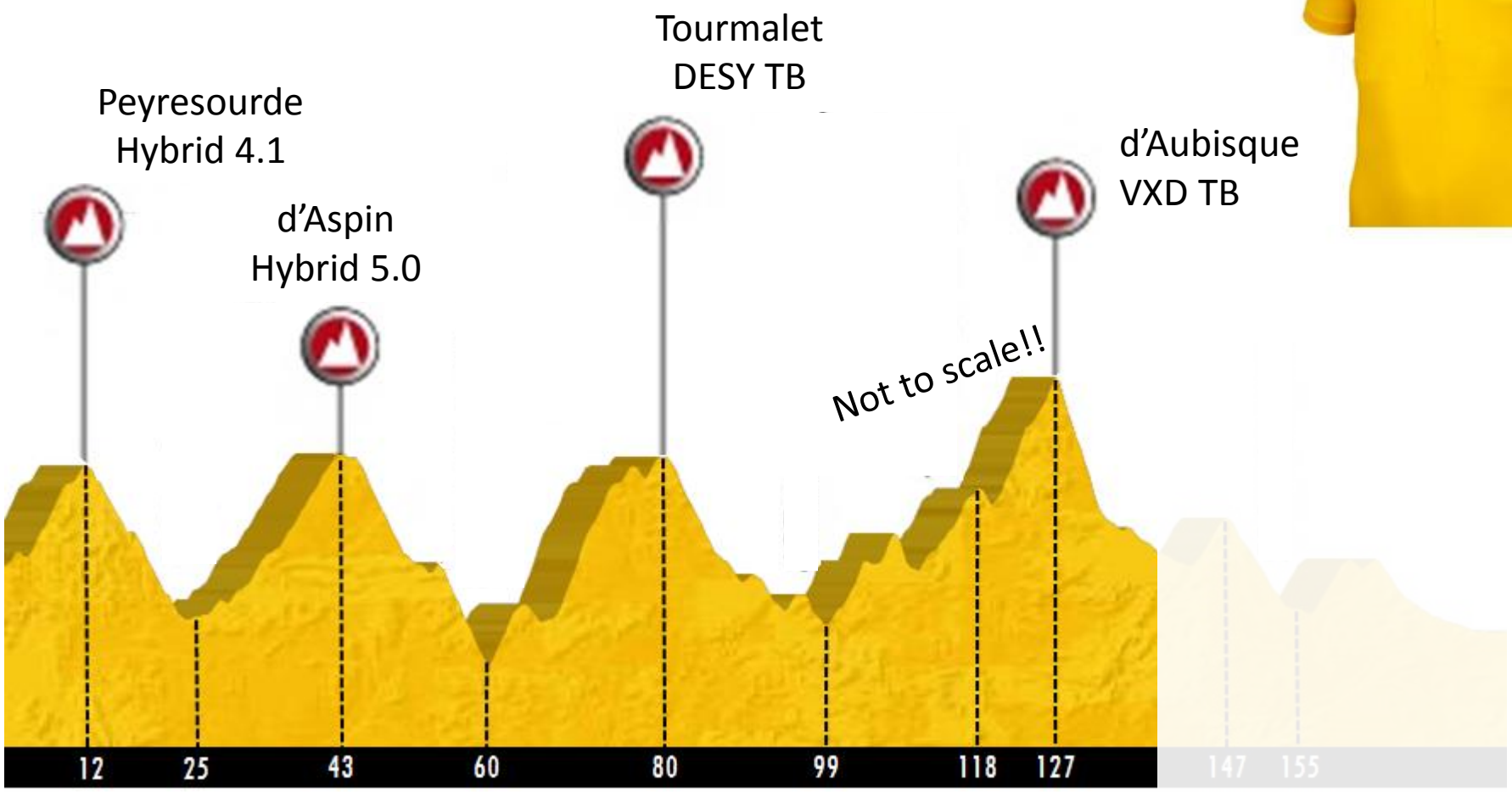
le Tour du DEPFET



Le Tour du DESY



le Tour du DESY



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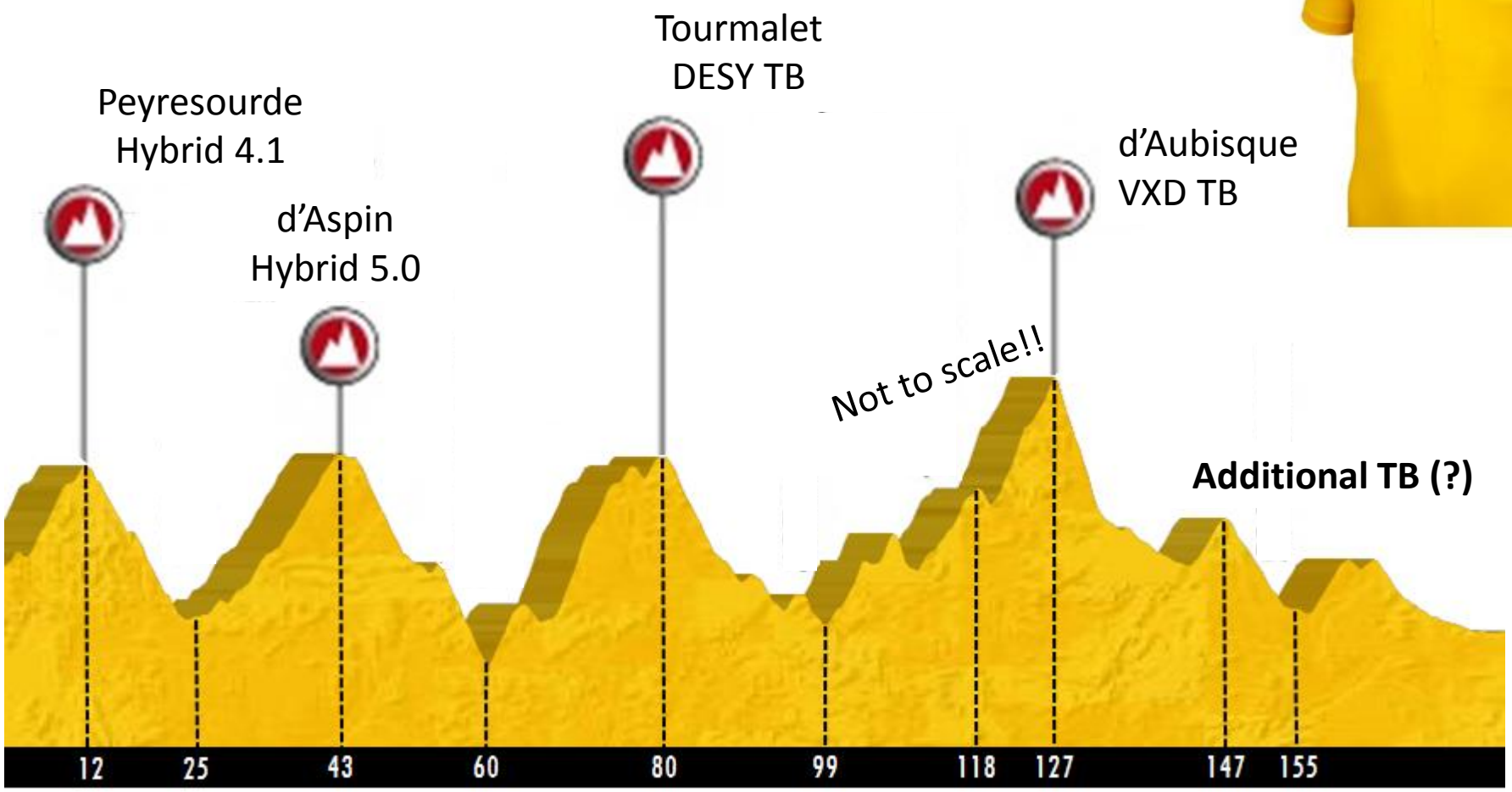

Conclusion

A big **THANK YOU** to all the team for the great achievement!

Now, time for the details

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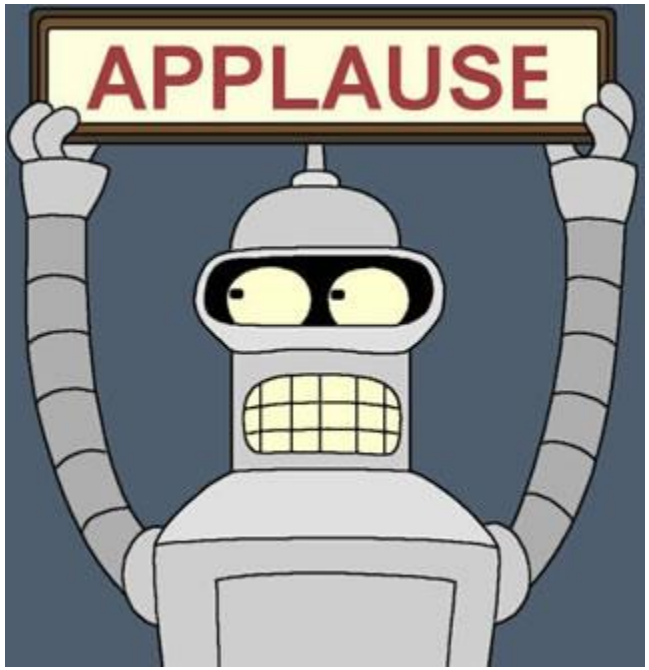

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Thank you

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