AVL MTC PMP Interlaboratory Correlation

Real-time particle number measurement

- **Golden Particulate Measurement System, GPMS**
  MD19 rotating disc + ET + Golden CPC (TSI)

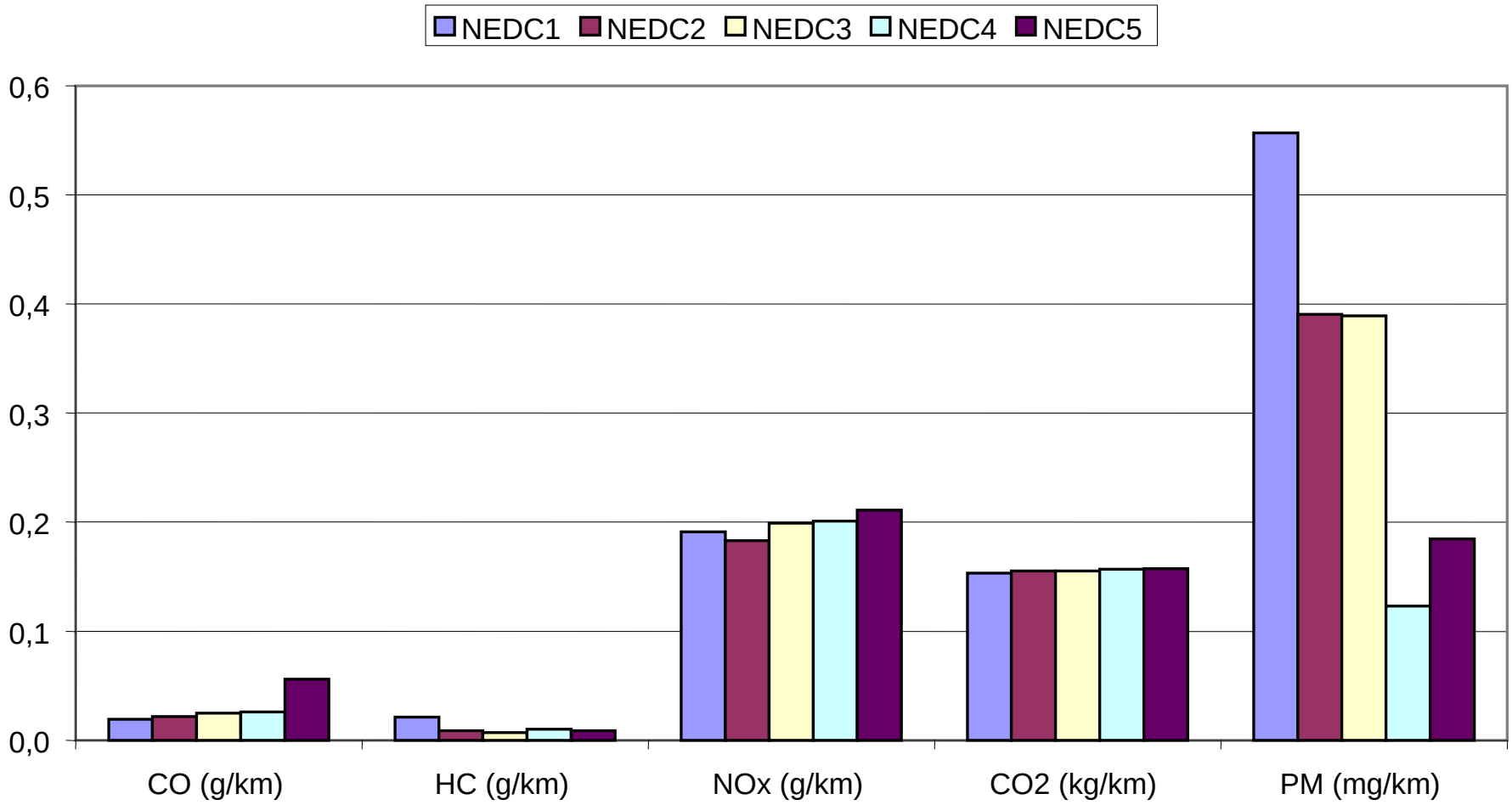
- **AVL MTC-instrument**
  ejector diluter (150°C) + ET (350°C) + TSI CPC

- **Dekati/Grimm-instrument**
  ejector diluter (350°C) + ejector diluter (r.t) + Grimm CPC

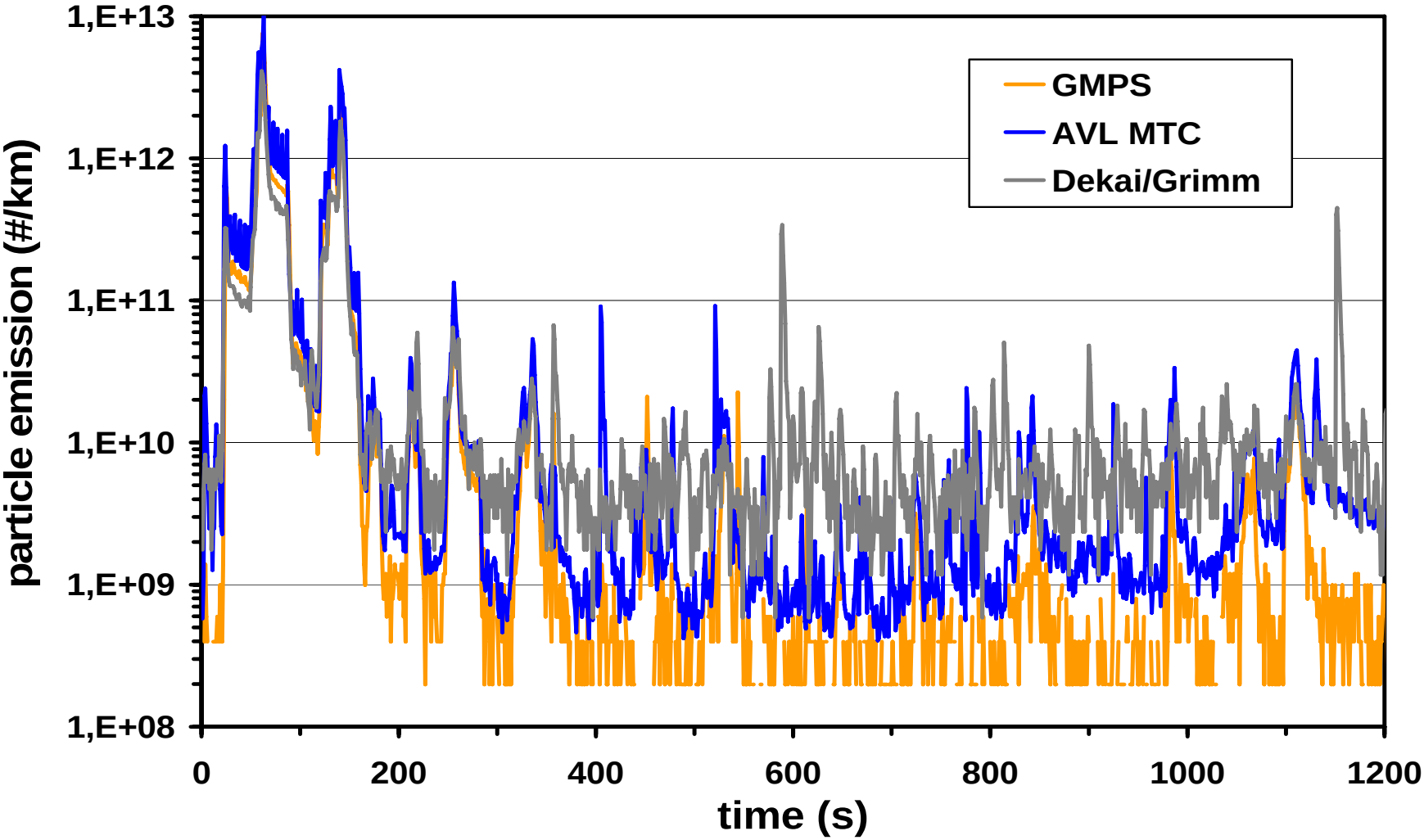
Test sequence and conditioni

	Conditioning	Test
Day 1	20 minutes 120 km/h + 3EUDC	
Day 2		NEDC1
Day 2	20 minutes 120 km/h + 3EUDC	
Day 3, 9:00		NEDC2
Day 3, 16:00		NEDC3
Day 3, 17:00	20 minutes 120 km/h + 3EUDC	
Day 4, 9:00		NEDC4
Day 4, 16:00		NEDC5

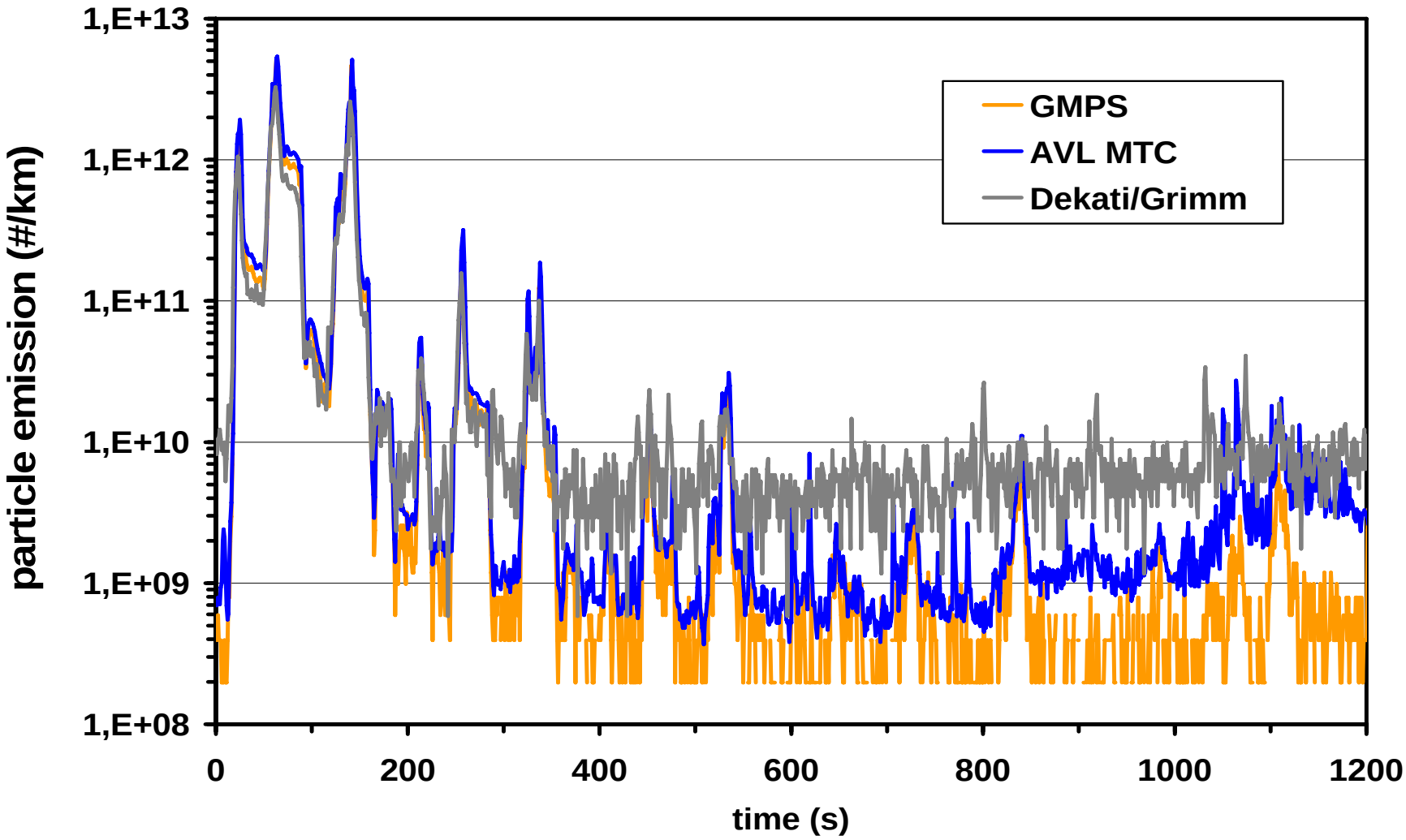
Emissions from five NEDC tests



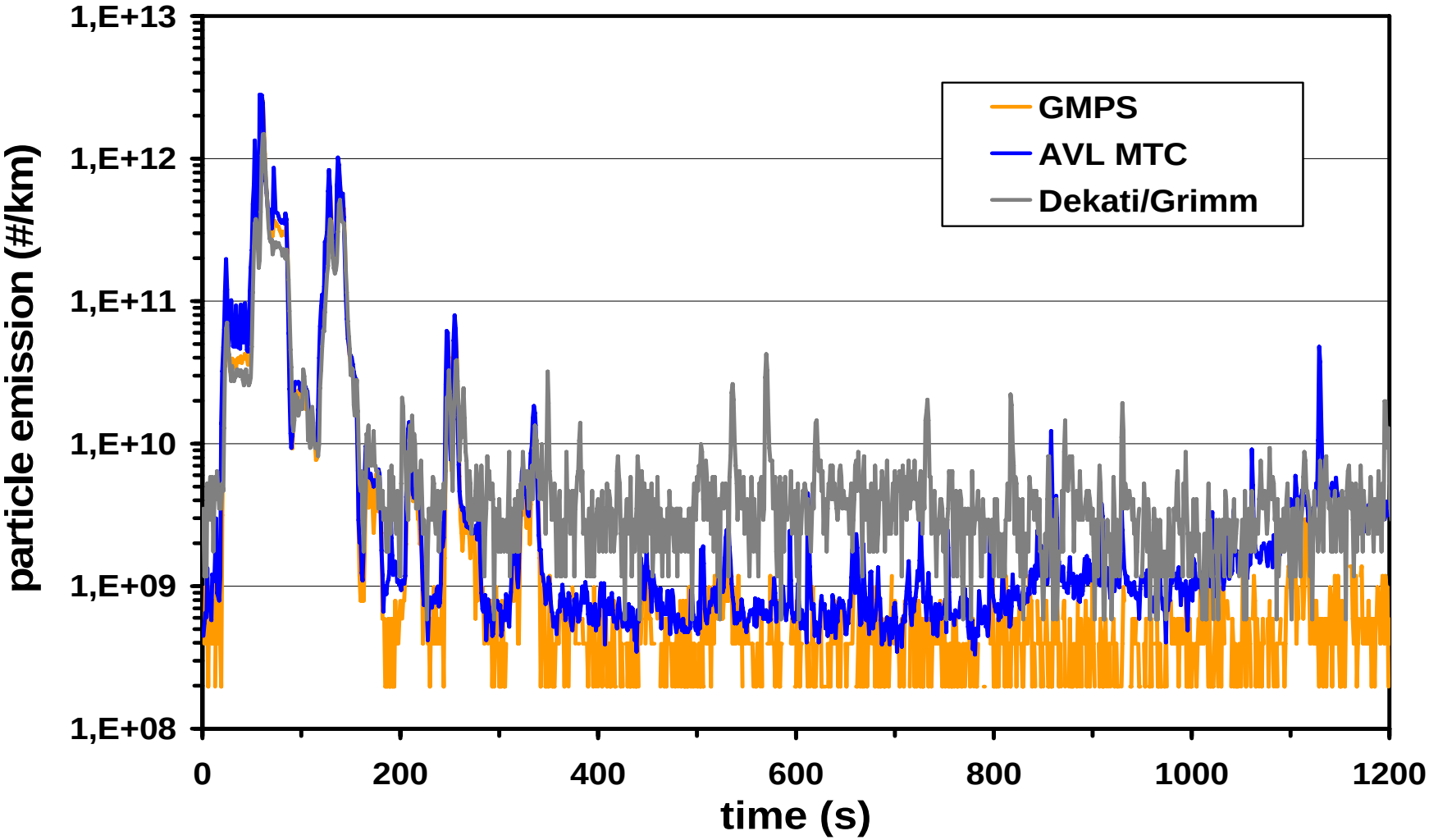
EDC1 particle number emission (not background correcte



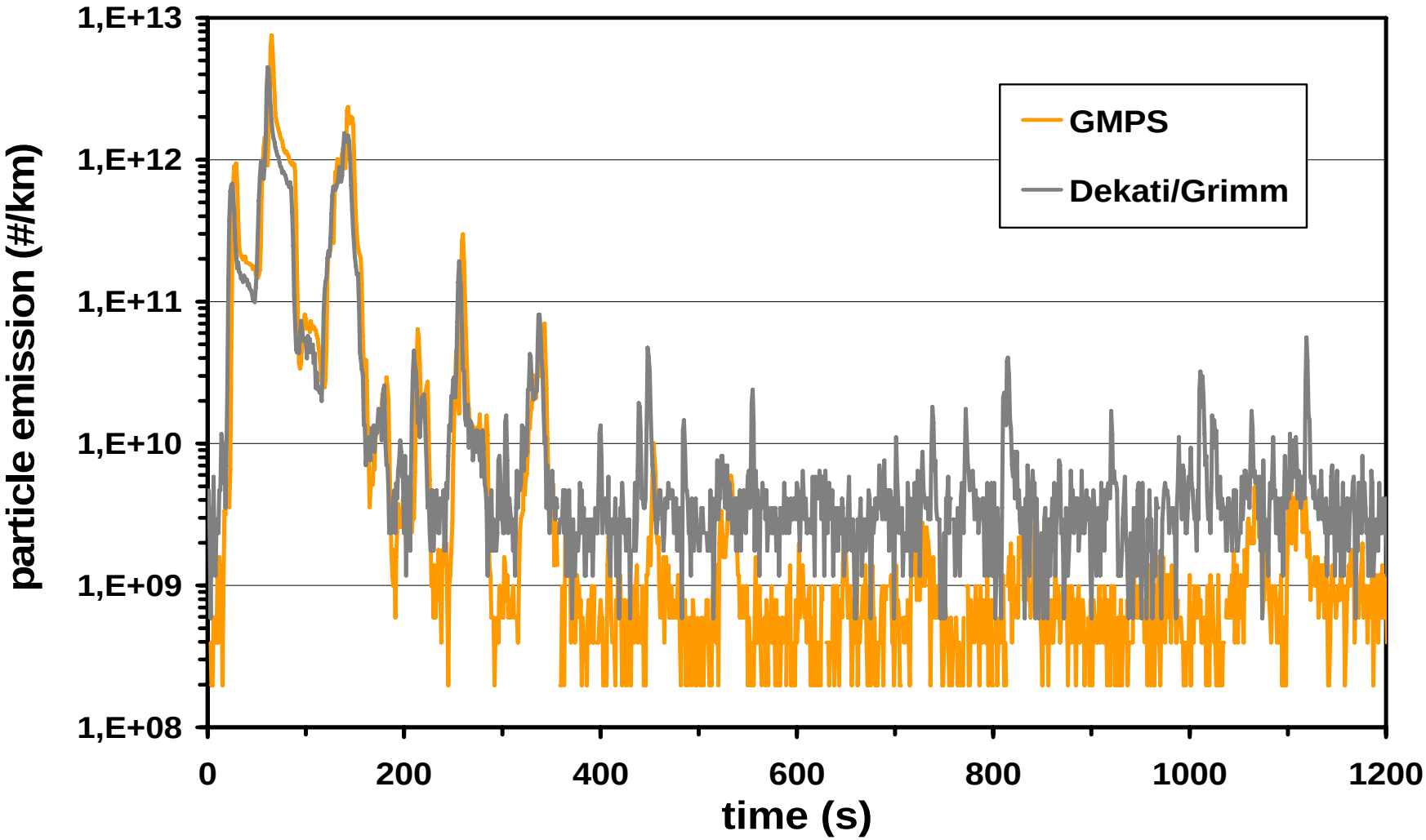
EDC2 particle number emission (not background correcte



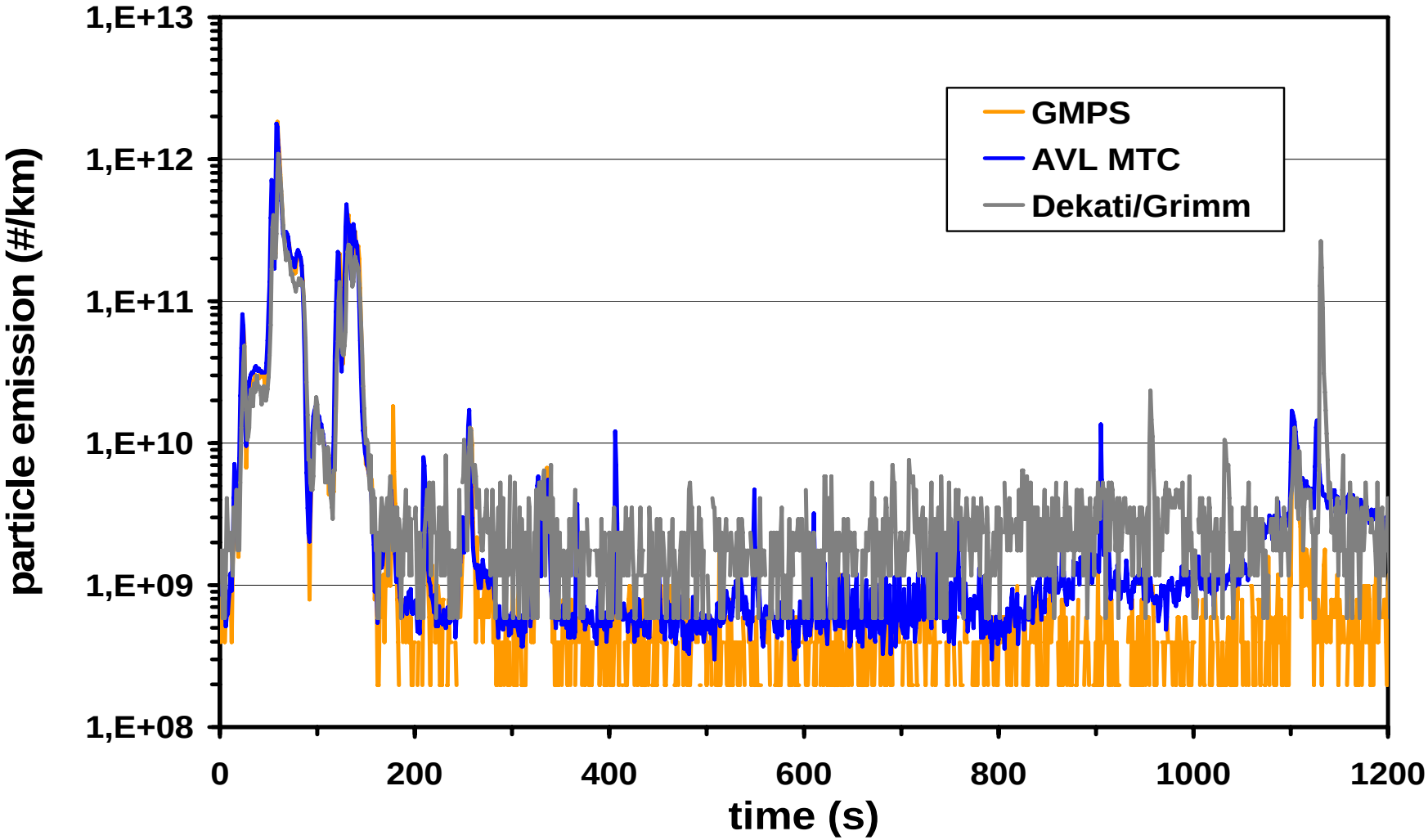
EDC3 particle number emission (not background correcte



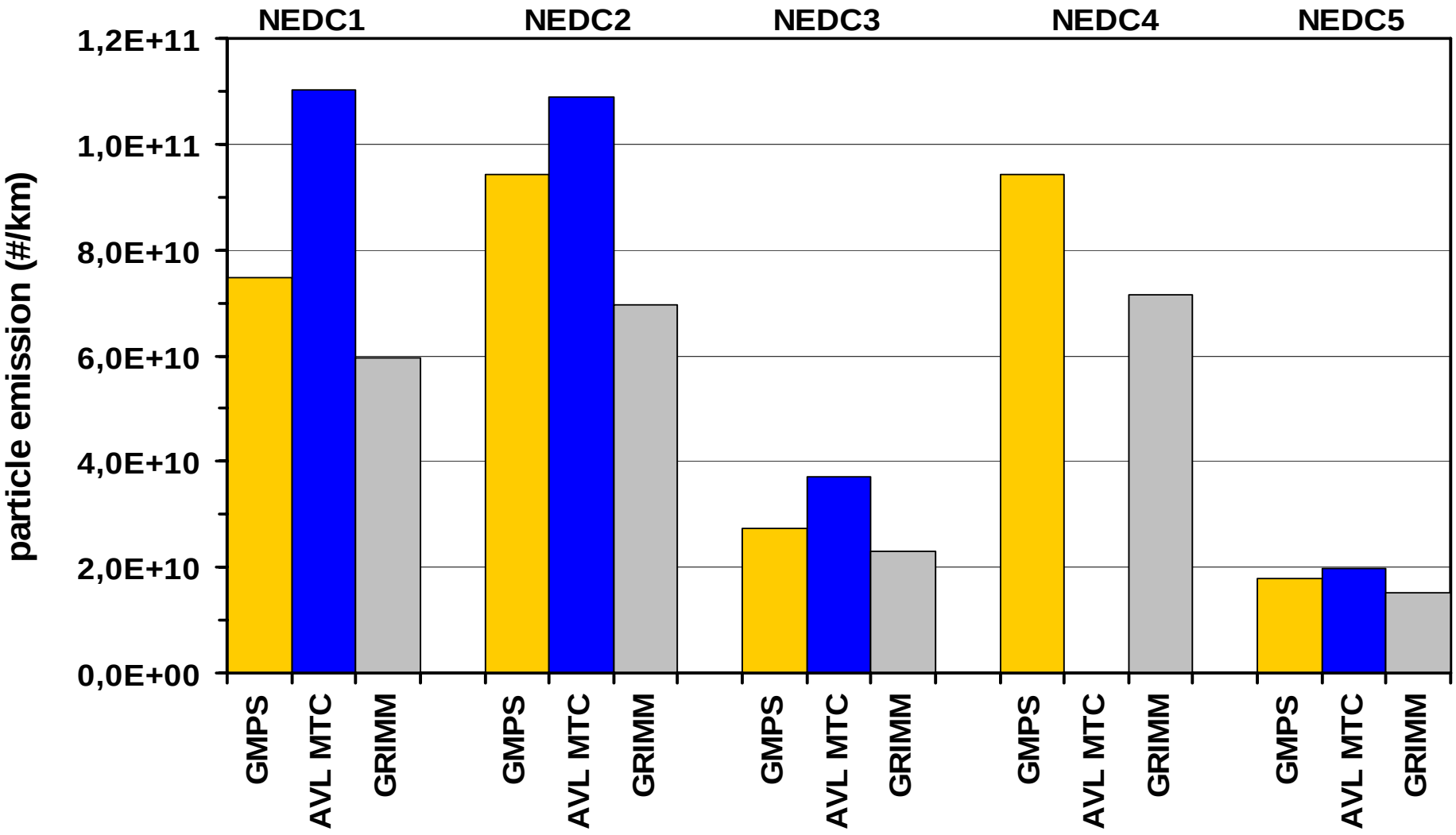
EDC4 particle number emission (not background correcte



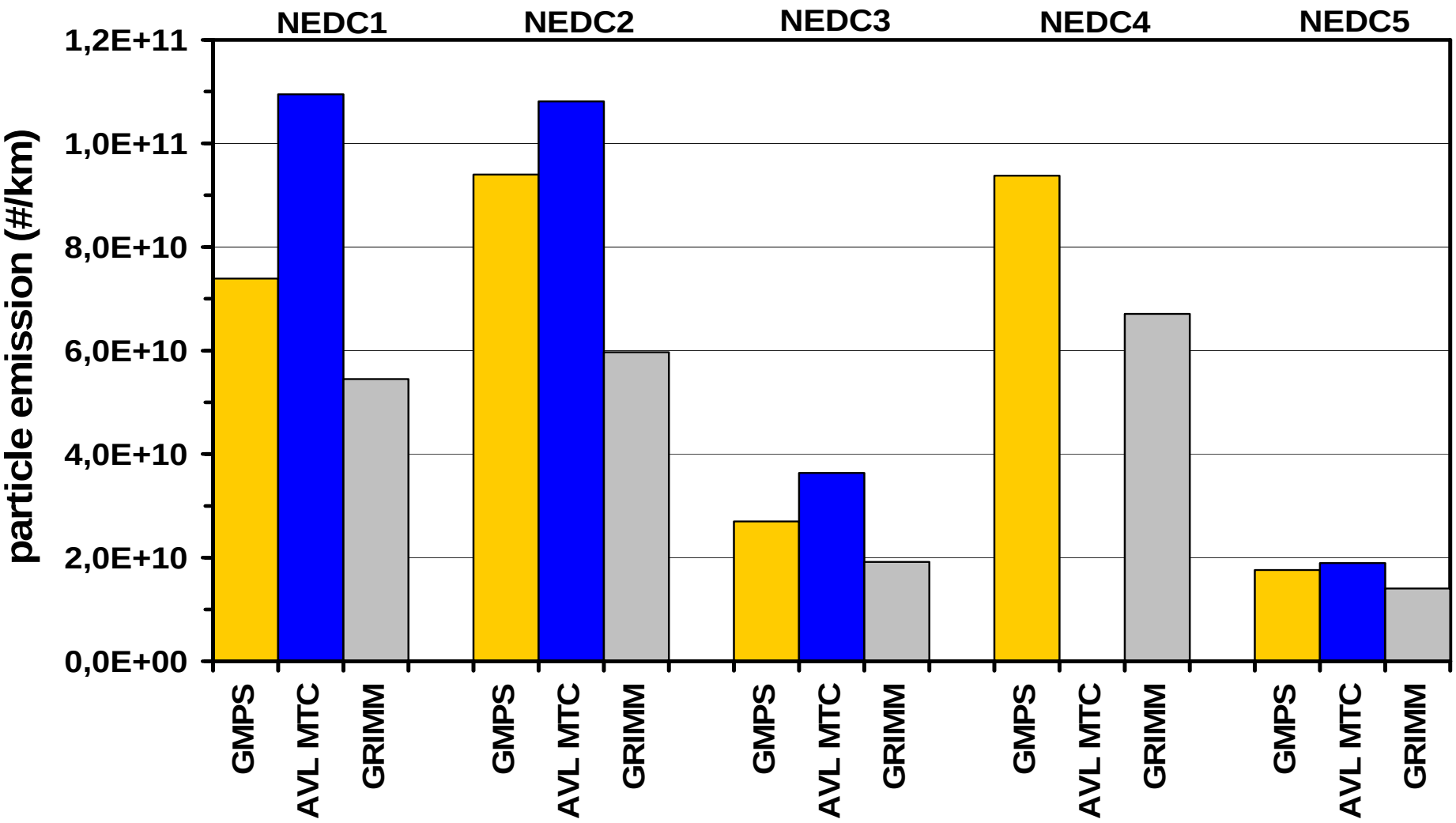
EDC5 particle number emission (not background correcte



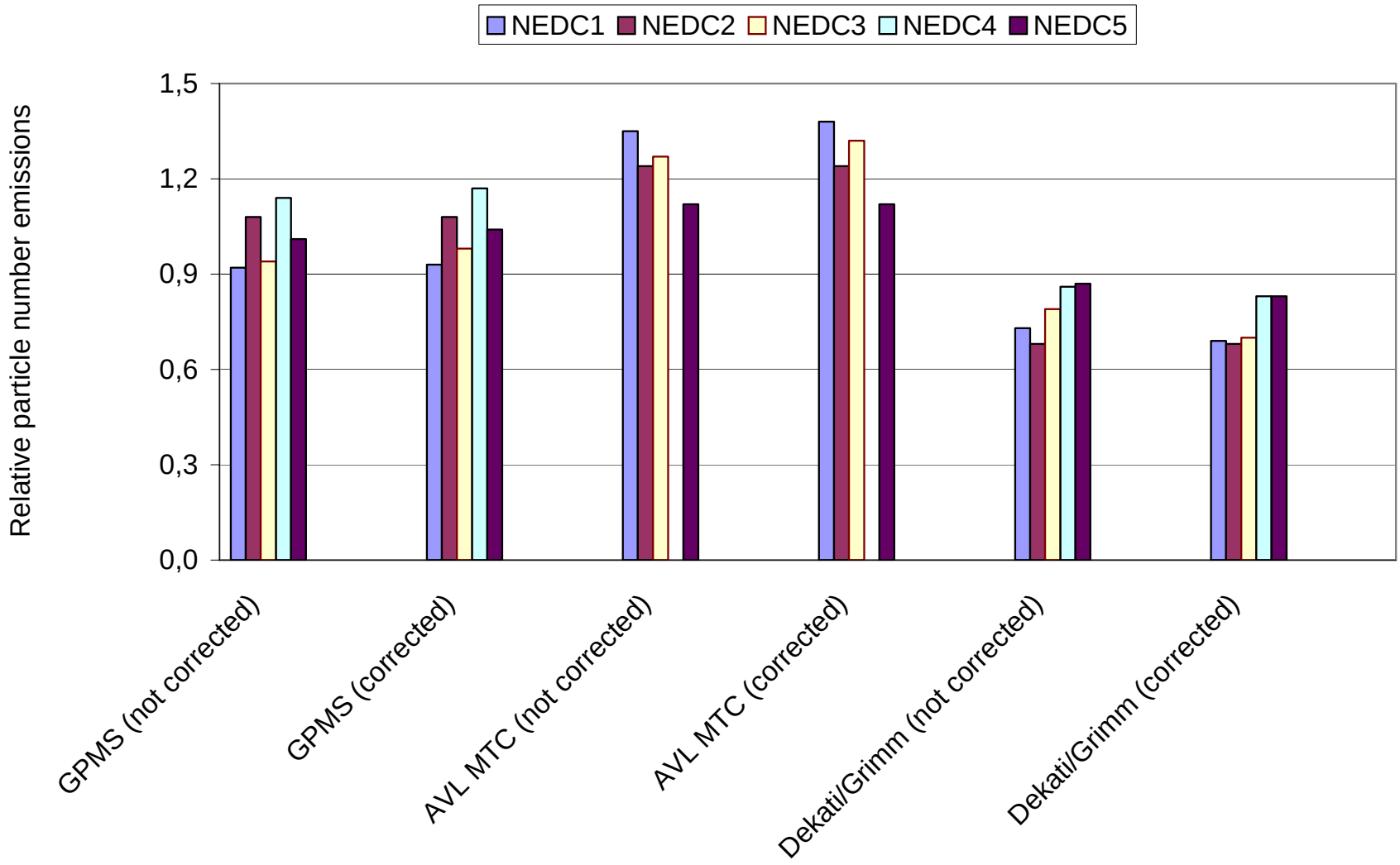
EDC particle number emission (not background correcte



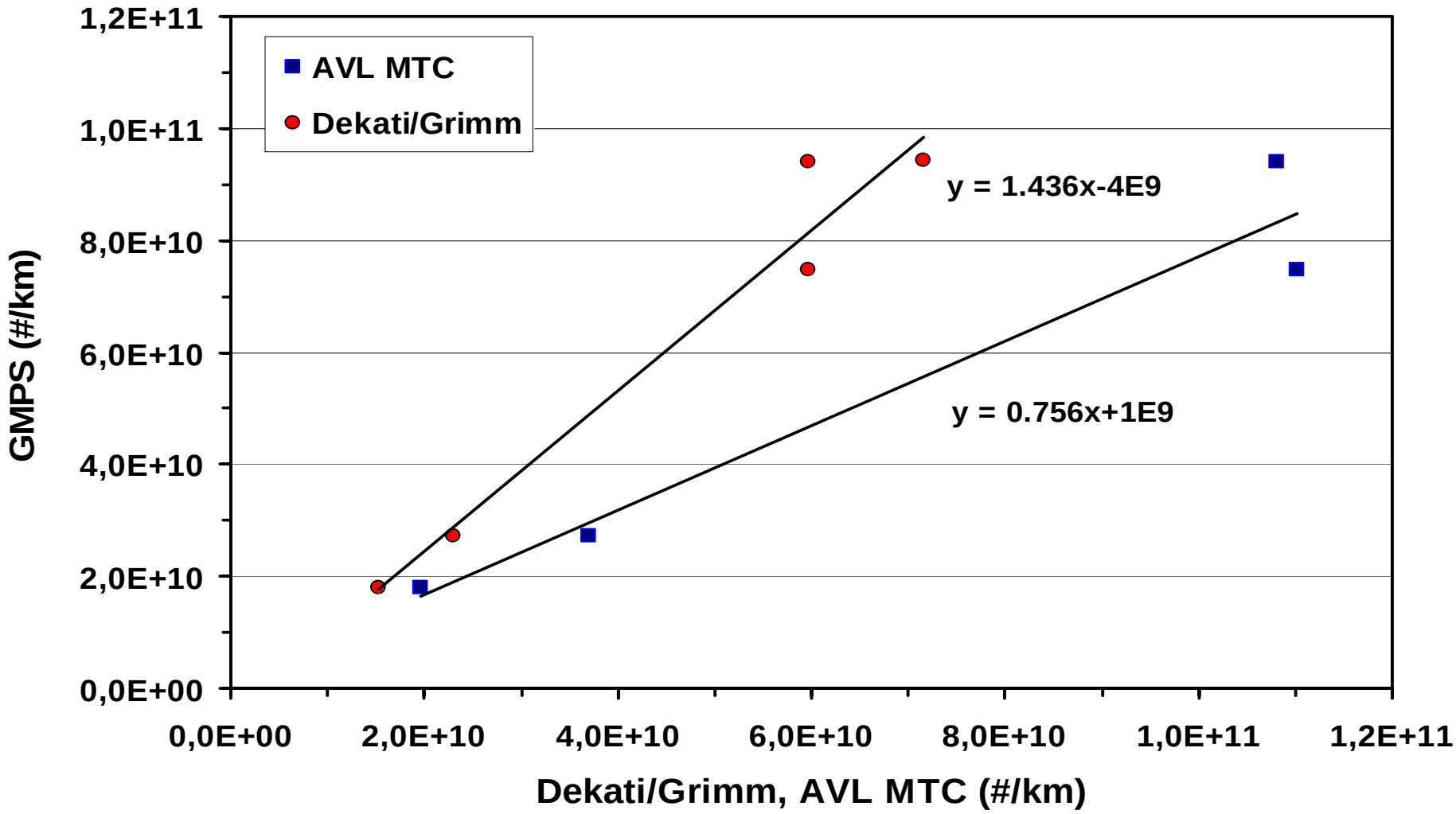
EDC particle number emission (background correcte



Relative particle number emission valu



egression of Dekati/Grimm, AVL MTC to the GPMS (not background corrected)



Conclusions

- All regulated components show emissions well below Euro4 emission limit values.

- The average PM emission was very low, 0.329 mg/km, and does not show any correlation with the particle number measurements.

- The three particle number instruments show the same real-time emission pattern following each other closely. The first 300 s of the cycle shows the highest emissions while the remainder of the cycle was close to or even below background particle concentrations.

- The relative average emission value for the individual instrument was significantly different from each other. The regression analysis showed a systematic difference between the three instruments.