

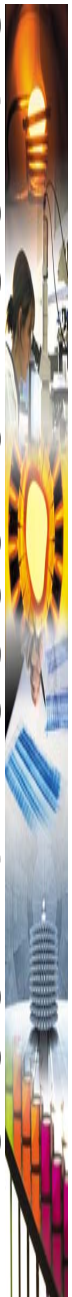


Growth Project GDR1-1999-10496

“NeDeNeF”

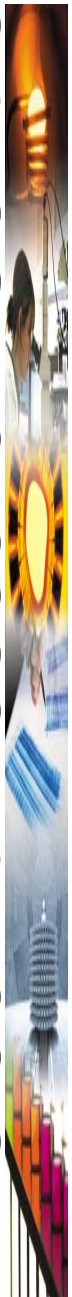
“New Diesel Engine and New Diesel Fuels”

Time frame : 2000 - 2003



Objectives:

- Influence of future fuel formulations on:
 - pollutant emissions
 - performancesof new DI diesel technology
- Application of advanced techniques to characterise particulate emissions in terms of:
 - total mass and mass/size distribution
 - particle number and size
 - particle total surface



December 2001- February 2002: Emission Test Campaign I for NeDeNeF

- 8 Test Fuels :
 - Fuel parameters: density, compressibility, viscosity, surface tension
- Test vehicle: Mercedes C220 CDI
 - “common rail” injection system
- Test type:
 - New European Driving Cycle

Test Fuels:

Fuel 1 – high surface tension

Fuel 2 – low surface tension

Fuel 4 – low density

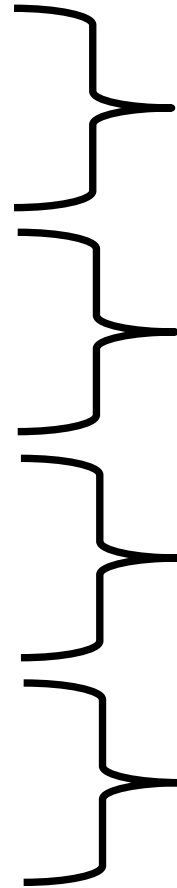
Fuel 5 – high density

Fuel 6 – low viscosity

Fuel 7 – high viscosity

Fuel 8 – high compressibility

Fuel 9 – low compressibility



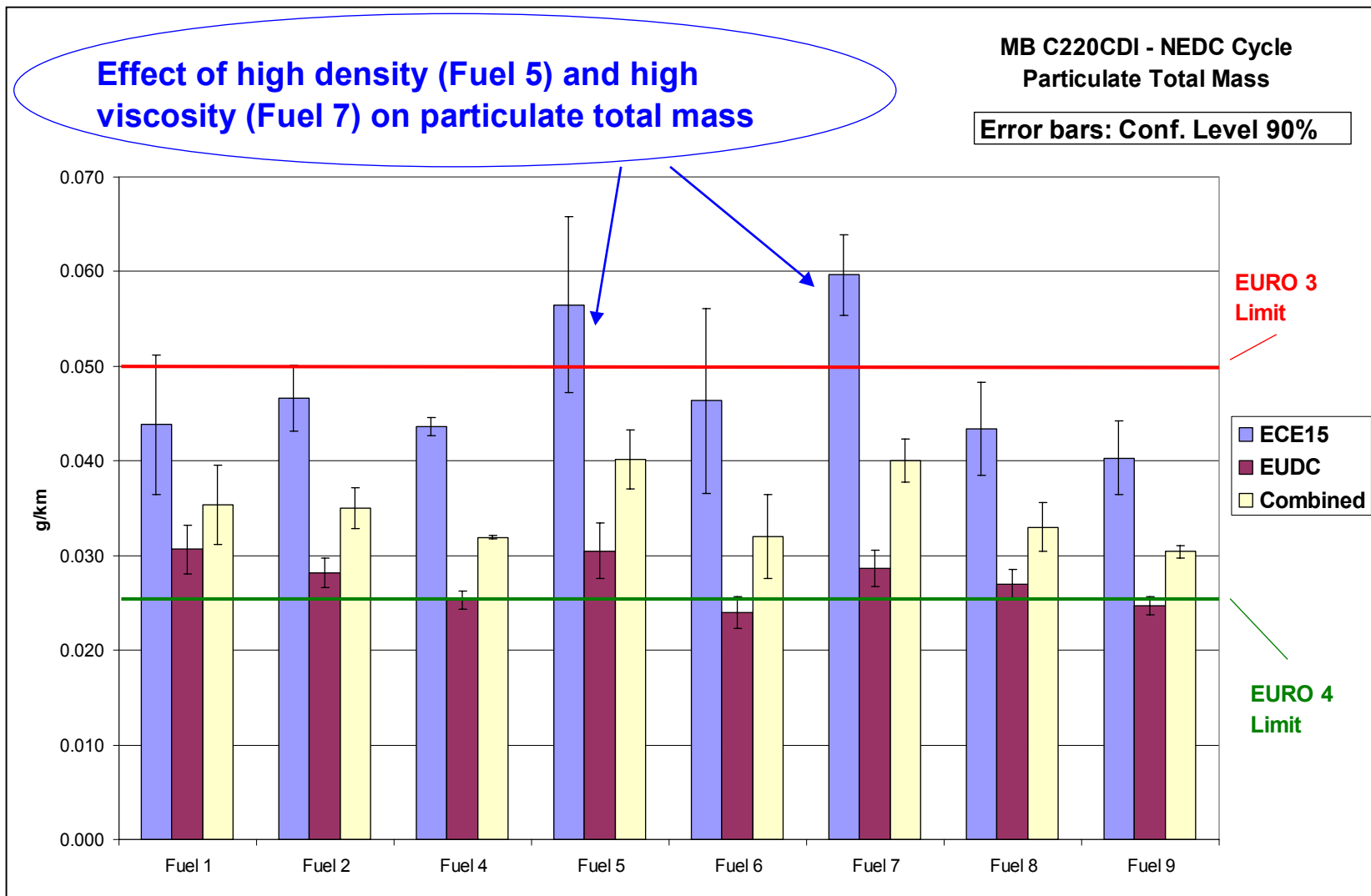
Surface Tension Matrix

Density Matrix

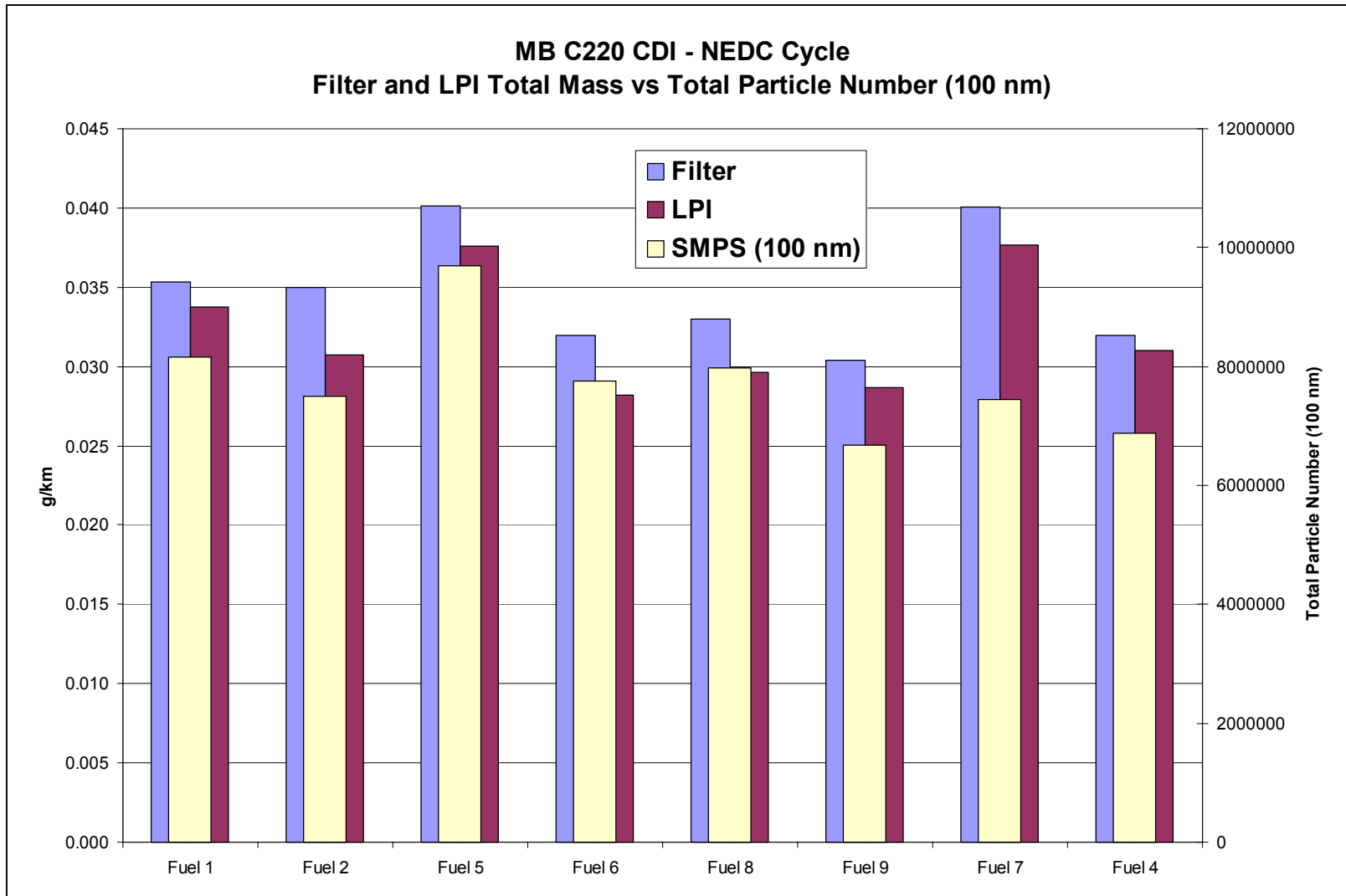
Viscosity Matrix

Compressibility Matrix

Important effects of fuel quality on particulate total mass

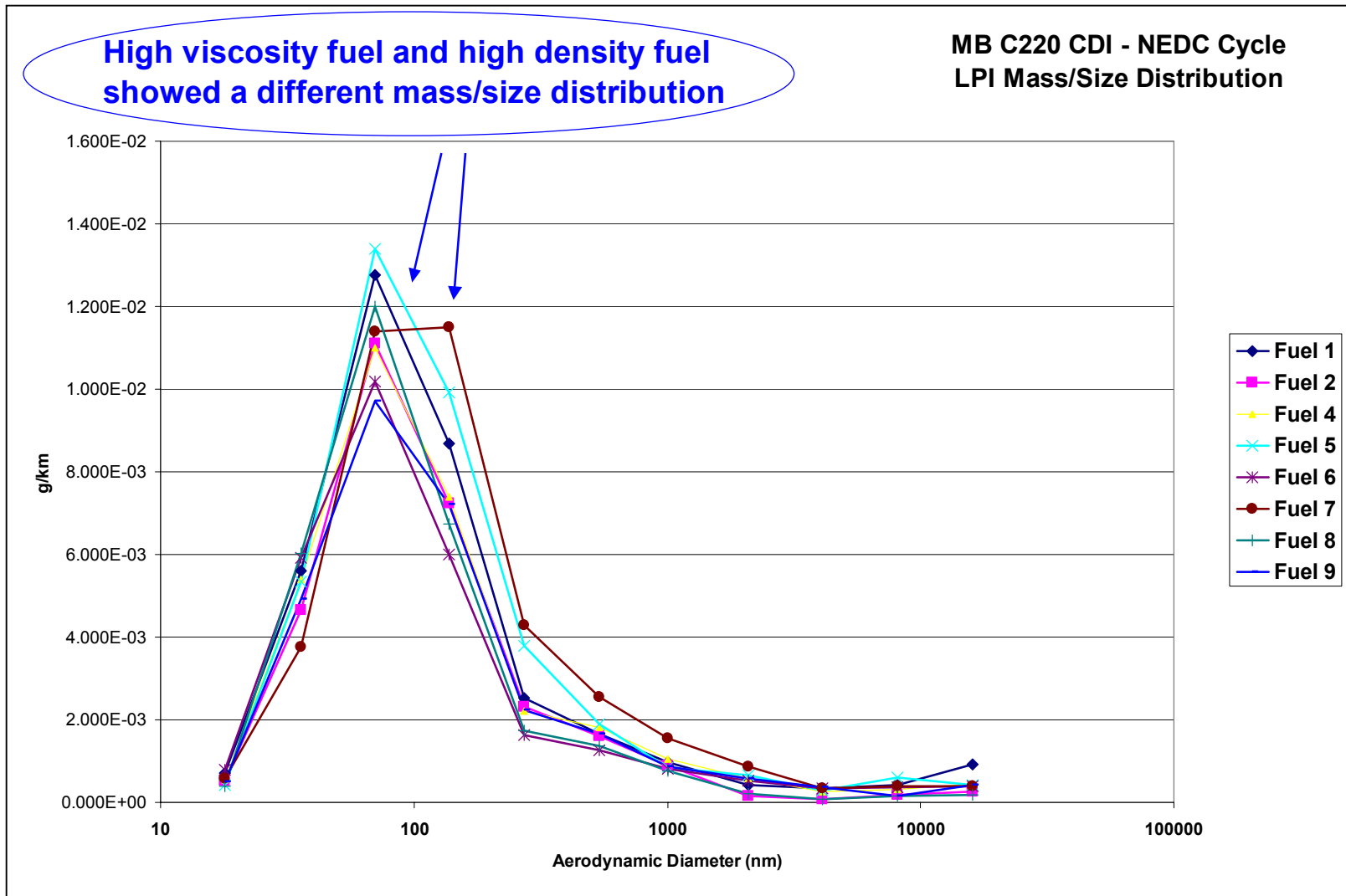


High consistency among the results obtained with different advanced techniques



Important effects of fuel quality on the mass/size distribution

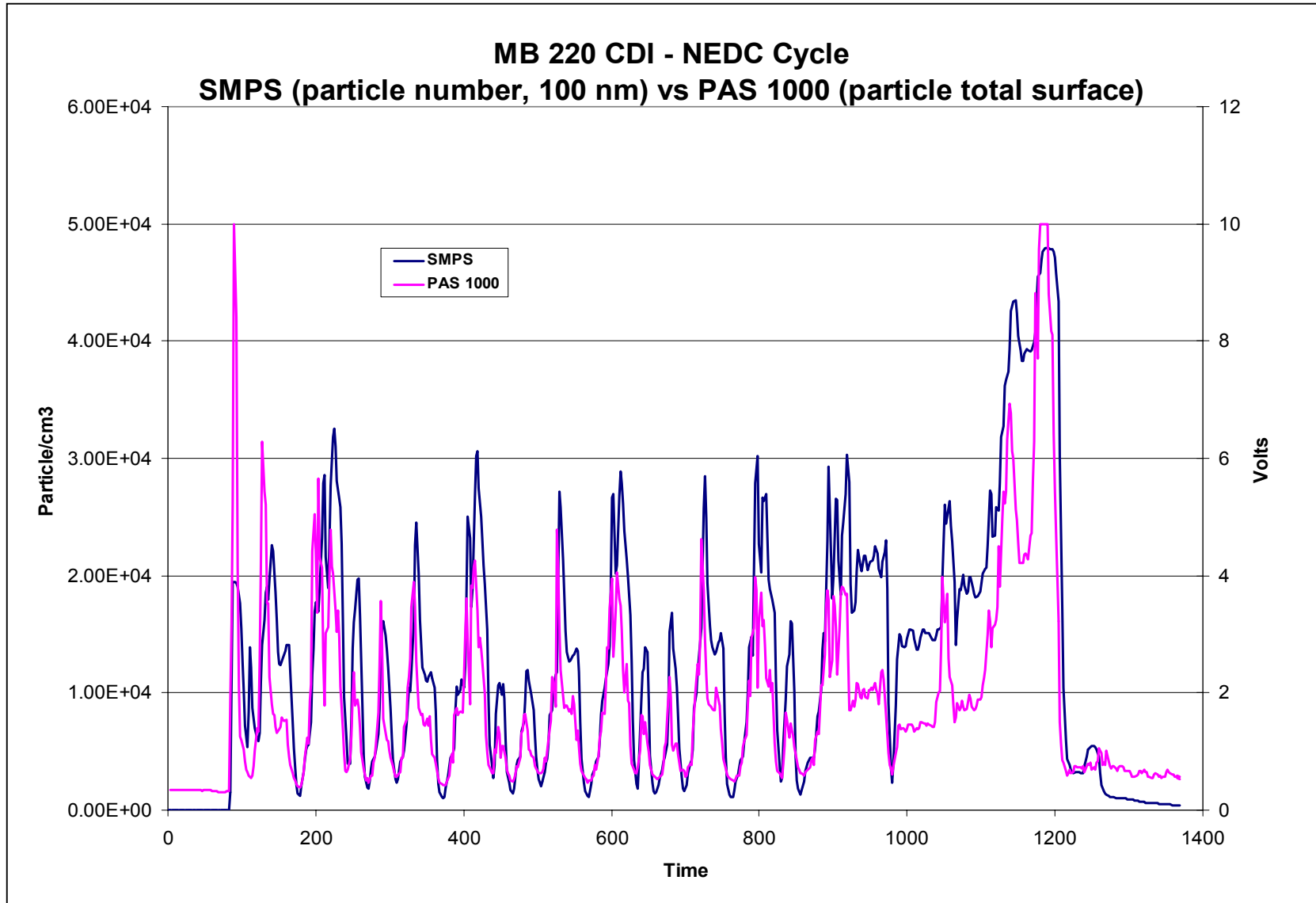
JRC



High consistency between the response of two very different instruments

JRC

The Joint Research Centre





Conclusions

- Emission test campaign 1 successfully completed
- High consistency among the results obtained with very different advanced measurement techniques
- Effects of fuel quality on
 - particulate total mass
 - mass/size distributions