Forschungszentrum Jülich
in der Helmholtz-Gemeinschaft

EUROCHAMP-2

Networking Activity N1: Raw Data Analysis, Data Inter-Comparison, and Quality Assurance

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N1 ***outline***

- Quality assurance of data (**N1**)
  - Co-ordinated experiments:
  - Chamber characterisation
  - Simulation of standard scenarios at different chambers
  - Instrument intercomparison

- Exchange of experimental and model data (**N1, N2**)
  - Raw data format
  - Quality assurance of raw data

Objectives Eurochamp → Eurochamp2

Comparable and quality-assured data from the individual chambers. Based on the successful work in EUROCHAMP1, we will continue

- to enhance the quality assurance protocol for all types of data to be measured in the chambers.
- to devise improved reference experiments to be carried out in chambers under similar/identical conditions.
- to inter-compare instruments under various conditions provided by the different chambers.
- to provide detailed information on chambers and their instrumentation through EUROCHAMPwebsite.

New objectives in the EUROCHAMP-2 are

- to inter-compare the aerosol generation at the different chambers.
- to include turbulence and chamber inhomogeneities in the inter-comparison process.
- to establish a connection to international metrology activities.

Table of Chambers within EUROCHAMP

- available on the web: http://saphir.fz-juelich.de/eurochamp/

Institution	*Number*		1	1	1	1	2	2	
Institution	*Abreviation*		**BUW**	**BUW**	**BUW**	**BUW**	**JRC**	**JRC**	
Institution	*Name*		Bergische Universität Wuppertal	Bergische Universität Wuppertal	Bergische Universität Wuppertal	Bergische Universität Wuppertal	European Commission DG Joint Research Centre	European Commission DG Joint Research Centre	E
Institution	*Department*		Institut für Physikalische Chemie	Institut für Physikalische Chemie	Institut für Physikalische Chemie	Institut für Physikalische Chemie	Institute for Environment and Sustainability	Institute for Environment and Sustainability	
Institution	*Address*		Gaußstraße 20, D-42119 Wuppertal	Gaußstraße 20, D-42119 Wuppertal	Gaußstraße 20, D-42119 Wuppertal	Gaußstraße 20, D-42119 Wuppertal	Via E. Fermi 1, I-21020 Ispra (VA)	Via E. Fermi 1, I-21020 Ispra (VA)	V
Institution	*Phone*		+49-202-439-2515 / -3832	+49-202-439-2515 / -3832	+49-202-439-2515 / -3832	+49-202-439-2515 / -3832	+39-332-789076	+39-332-789076	
Institution	*Fax*		+49-202-439-2757	+49-202-439-2757	+49-202-439-2757	+49-202-439-2757	+39-332-785837	+39-332-785837	
Institution	*WWW*		http://www.physchem.uni-wuppertal.de/	http://www.physchem.uni-wuppertal.de/	http://www.physchem.uni-wuppertal.de/	http://www.physchem.uni-wuppertal.de/	http://www.jrc.cec.eu.int/	http://www.jrc.cec.eu.int/	h
PI	*Name*		Barnes	Barnes	Barnes	Barnes	Hjorth	Hjorth	Hj
PI	*First Name*		Ian	Ian	Ian	Ian	Jens	Jens	Je
PI	*email*		barnes@uni-wuppertal.de	barnes@uni-wuppertal.de	barnes@uni-wuppertal.de	barnes@uni-wuppertal.de	jens.hjorth@jrc.it	jens.hjorth@jrc.it	jen
Chamber	*Short Name*		**6M**	**3M**	**405**	**90**	**2000L**	**3000L**	
Chamber	*Long Name*		glass/quartz cylinder 2	glass/quartz cylinder 1	glass/quartz cylinder 3	glass/quartz cylinder 4	2000l Aerosol Reaction Chamber	Large Teflon Bag	
Chamber	*Type*		Indoor Photoreactor	Indoor Photoreactor	Indoor Photoreactor	Indoor Photoreactor	Indoor Chamber	Outdoor Photoreactor	
Chamber	**Shape**		**Cylinder**	**Cylinder**	**Cylinder with inner Cylinder**	**Cylinder with inner Cylinder**	**Cube**	**Bag**	
Chamber	**Volume**	m^3	**1.086**	**0.48**	**0.412**	**0.350**	**2**	**3 (variable)**	
Chamber	Surface	m^2	**9.41**	**4.56**	**3.85**	**4.45**	**9**	**variable**	
Chamber	Surface Volume Ratio	m^{-1}	**8.66**	**9.50**	**9.34**	**12.71**	**4.69**	**variable**	
Chamber	Length	m	6	3	1.5	1.5	1.25		
Chamber	Diameter	m	0.48	0.45	0.6	0.6			
Chamber	Length inner cylinder				1.5	1.5			
Chamber	Diameter inner cylinder				0.1	0.24			
Chamber	**Material**		**Quartz, Al end flanges**	**Duran Glass, Al end flanges**	**Duran Glass, Al end flanges**	**Duran / Quartz Glass, Al end flanges**	**FEP**	**FEP**	
Chamber	**Light Source**		**Lamps**	**Lamps**	**Lamps**	**Lamps**	**Lamps**	**Sunlight**	
Chamber	**Spectral Range Min**	**nm**	**254**	**320**	**254**	**254**	**300**		
Chamber	**Spectral Range Max**	**nm**	**480**	**480**	**480**	**480**	**600**		
Chamber	Lamps 1		**32 x 36W Philips TL/05 (Blacklights)**	**20 x 36W Philips TL/05 (Blacklights)**	**18 x 36W Philips TL/05 (Blacklights)**	**5 x 36W Philips TL/05 (Blacklights)**	**8 x Osram Ultra-Vitalux 300W**		**18**

N1 Deliverables Eurochamp2

- Update of detailed chamber overview (M12,24,36,48) (all partners)
- Results of intercomparison experiments of trace gas and aerosol particle measurement techniques in selected chambers (M 12, 24,36, 48) (all partners)
- Protocol for quality of chemical measurements within the consortium (M12) (SP)
- Protocol for calculations of measurement uncertainties within the consortium (M24) (FZJ, SP)
- Results of the intercomparison of ozone and NOx instruments using traceable calibration (M36,M48) (SP, FZJ)
- Results of the chamber characterisation regarding actinic spectra, temperature gradients, chamber inhomogeneities, wall effects, turbulence, etc. (M 24, 36, 48) (all partners or FZJ, IFT, FZK,...)