

**EMRAS II, Theme 3:  
Approaches for Assessing Emergency Situations**

**Working Group 9  
Urban Areas Working Group**

**Kathleen Thiessen, WG Leader**

**24–28 January 2011**

**Vienna**

# Interim meeting in Sevilla June 2010

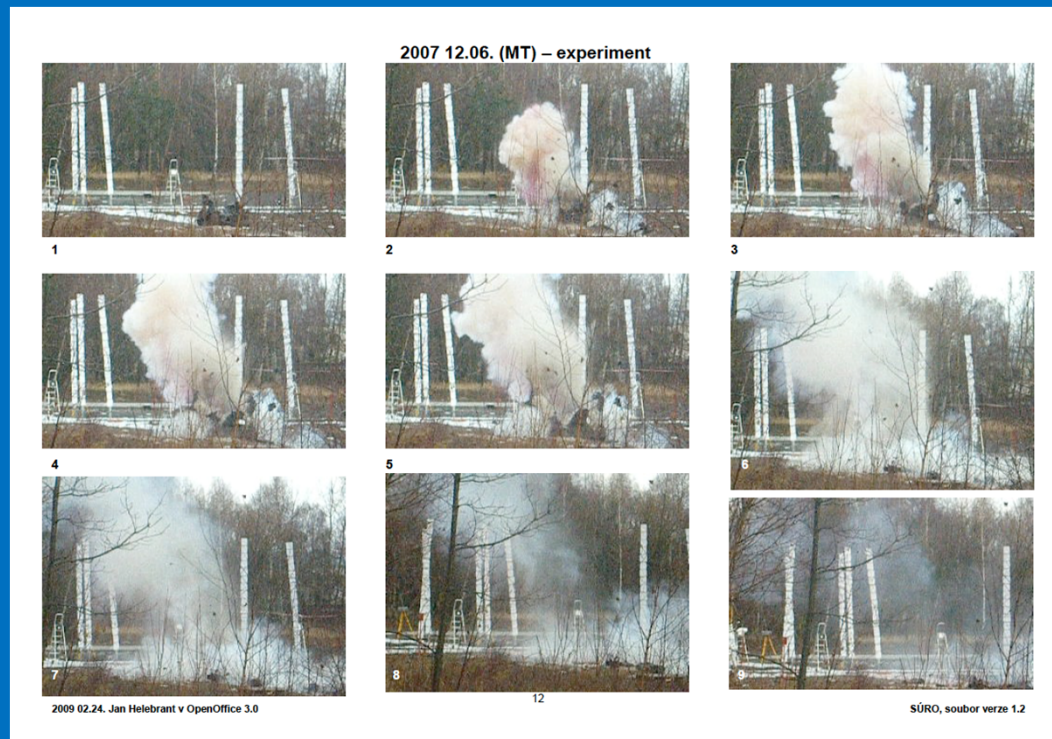


## Progress to date

- **Three modelling exercises in progress**
  - Atmospheric dispersion, short-range
  - Atmospheric dispersion, mid-range
  - Contaminant transport and countermeasures
- **Preliminary calculations have been made for all scenarios**
  - Two scenarios were discussed at the June meeting
  - First discussion of one scenario at this meeting

# Atmospheric dispersion, short-range

- Dispersion from several test explosions
  - Two tests are being used for model calibration
  - Two are being used for blind testing of model predictions

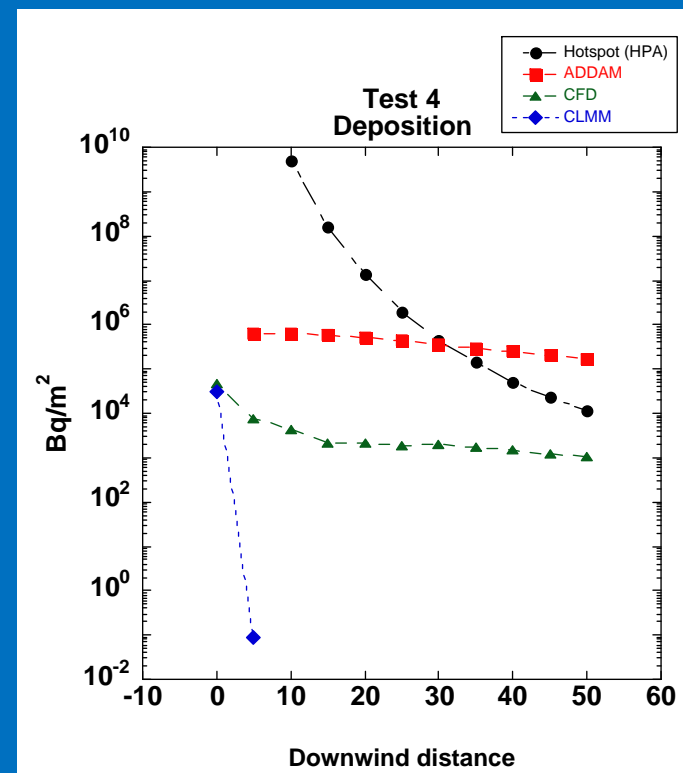
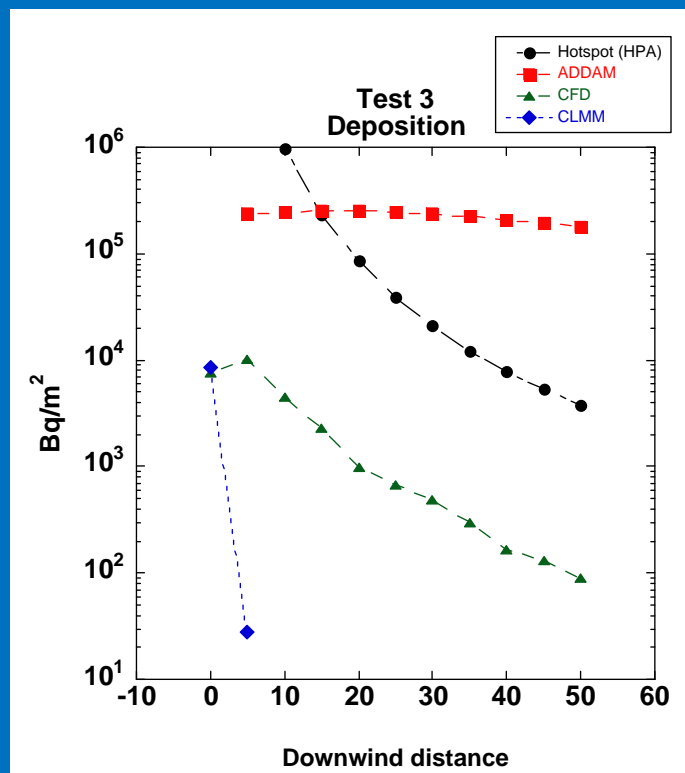


# Atmospheric dispersion, short-range

- **Comparison of model predictions with measurements**
  - Contamination densities
  - Dose rates
- **Model intercomparison for additional endpoints**
  - Activity concentrations in air
  - 95% contamination zone
  - Dispersion in the presence of structures (obstacles)

# Atmospheric dispersion, short-range

- Calculations from at least 7 participants



# Atmospheric dispersion, short-range

- **Plans for this meeting:**
  - Discuss modelling approaches and calculations
  - Compare modelling results among participants
  - Compare modelling results with measurements where possible
  - Develop schedule for completion of exercise

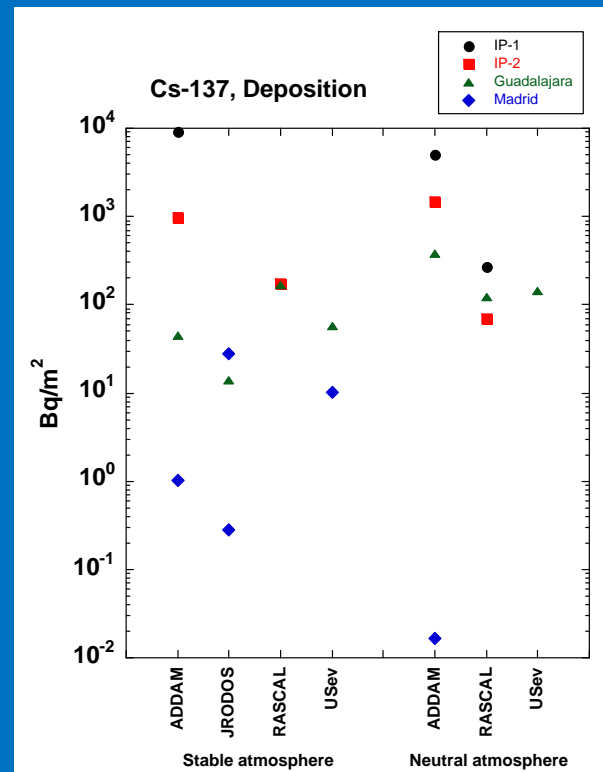
# Atmospheric dispersion, mid-range

- **Dispersion from a hypothetical NPP accident**
  - Rupture of a steam generator tube
  - 1 hour, variable release rates
  - Cs-137 and I-131
- **Deposition in an urban environment**
  - Geographical information for Trillo NPP (Spain)
  - Deposition in a small town (Guadalajara) and a big city (Madrid)
- **Model intercomparison exercise**
  - Deposition
  - Activity concentrations in air



# Atmospheric dispersion, mid-range

- Calculations from at least 4 participants



# Atmospheric dispersion, mid-range

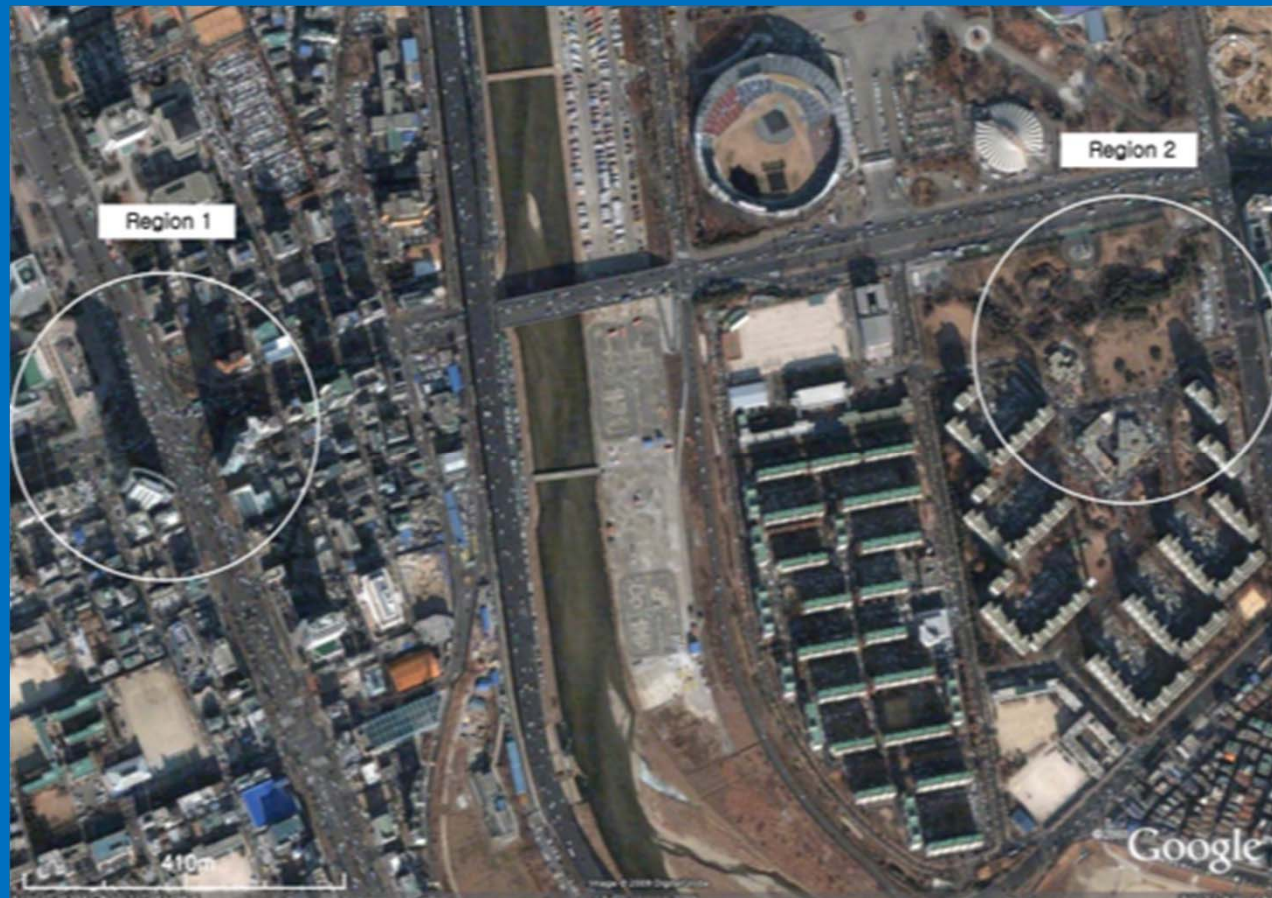
- **Plans for this meeting:**
  - Discuss modelling approaches and calculations
  - Compare modelling results among participants
  - Develop schedule for completion of exercise

# Contaminant transport and countermeasures

- **Two situations**
  - Predicted deposition from NPP dispersion exercise
  - Defined deposition, detailed description of part of a city (Seoul)
- **Model intercomparison exercise**
  - Contamination densities
  - Dose rates and doses
  - With and without countermeasures

# Seoul scenario

- Unspecified deposition events
- Pu-239 and Co-60 (considered separately)
- Business area and park area
- Effects of weather and season



# Contaminant transport and countermeasures

- **Plans for this meeting:**
  - Discuss modelling approaches and calculations
  - Compare modelling results among participants
  - Develop schedule for completion of exercise

# Summary of meeting plans

- **Present and discuss modelling approaches and preliminary calculations for all 3 scenarios**
- **Develop schedules for completion of the exercises**
- **Future plans**
  - ICRER meeting in Ontario
  - Interim WG meeting
  - Draft WG report