The Variations of O₃ in relation with BVOCs at Taehwa Research Forest in South Korea

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Taking pictures are permitted but notice me when you use the figures.

### Taehwa Research Forest (TRF)
- Located near Seoul Metropolitan Area (SMA)
- Mixed forest (mainly coniferous near measuring tower)
- Mainly deciduous forest, afforested coniferous near measuring tower
- Originally deciduous tree forest
- =1km SE from Seoul Metropolitan Area (SMA)
- Highway located east near

### Vertical Variations
- O₃ conc.: above + below canopy
  - 0.2, high, enough condition for photochemistry
  - Look good in canopy (especially May & June)

- Highest BVOCs in June
  - BVOCS concentration above + below canopy
  - Direct emission from vegetation

### Model Calculation
- Initial conditions
  - 4 scenarios to verify HONO & RO radicals
  - Rapid H₃O⁺ increase in the morning with HONO condition
  - OH decreased reaction with BVOCs, especially high in afternoon
  - NOx anaerobic condition
  - Both HONO & BVOCs affected H₂O₂, NO radicals
  - HONO affected by OH from HONO, RO radicals, affected by BVOCs
  - Reactivity: NOₓ + O₃ + BVOCs

### Production Rate of O₃
- S1(red), S2(blue), S3(green), S4(violet)
- HONO, NO → RO radicals
- RH₂O₂ increase in the morning with HONO condition
- OH decreases reaction with BVOCs, especially high in afternoon

### Projection of OH activities
- NO from NO, O₃ + BVOCs
- RO radicals

### Conclusion
- OH from photolysis of HONO in the morning
- BVOCs contribute O₃ production
- Initiative radical chemistry
- Isoprene contributes RO radicals
- Monoterpenes contribute O₃
- Deposition velocity Vₐ = 0.15 cm/s

### Acknowledgement
This presentation supported by the project titled "Construction of Ocean Research System and their Application Studies" funded by the Ministry of Science and Information, Korea.