

EGU25-19934, updated on 21 Apr 2026  
<https://doi.org/10.5194/egusphere-egu25-19934>  
EGU General Assembly 2025  
© Author(s) 2026. This work is distributed under  
the Creative Commons Attribution 4.0 License.



## Current status of validation and improvement of GEMS data

**Limseok Chang**<sup>1</sup>, Hyunkee Hong<sup>2</sup>, Jhoon Kim<sup>3</sup>, Donghee Kim<sup>4</sup>, and Dongwon Lee<sup>5</sup>

<sup>1</sup>NIER, Incheon, Republic of Korea (limsuk@gmail.com)

<sup>2</sup>NIER, Incheon, Republic of Korea (wanju77@korea.kr)

<sup>3</sup>Yonsei University, Seoul, Republic of Korea (jkim2@yonsei.ac.kr)

<sup>4</sup>NIER, Incheon, Republic of Korea (dhk53@korea.kr)

<sup>5</sup>NIER, Incheon, Republic of Korea (ex12@korea.kr)

GEMS data is constantly improved through ongoing validation and evaluation efforts. The ASIA-AQ field campaign conducted in early 2024 provided an opportunity to expand the GEMS validation area to Southeast Asia. In particular, aerial observations produced accurate vertical profile information of chemical substances, which enabled the evaluation of the uncertainty of GEMS input data. In addition, the Pandora Asia Network Project was completed in late 2024, with a total of 20 Pandoras installed in seven Southeast Asian countries. Real-time validation is now available in most GEMS scan regions, excluding South Asia. Meanwhile, the GEMS retrieval algorithm update was recently completed, and data distribution began in late 2024, and additional updates are planned for later this year. The latest results and future plans for GEMS data validation and improvement are presented in this study.