| Session Title          | Integration of the Global Human Settlement Layer with<br>SDGSat facilitating the implementation of the SDGs: A<br>new milestone for GEO Human Planet partnership  |
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| Session<br>Description | <ul> <li>This session explores how Earth Observation (EO) data—particularly nighttime light (NTL) imagery—can track progress toward Sustainable Development Goal 11 (Sustainable Cities and Communities) and other global frameworks. With urbanization accelerating worldwide, EO provides scalable, objective insights into urban growth, energy use, inequality, and disaster resilience, complementing traditional statistical methods.</li> <li>As priority for the implementation of the GEO Human Planet work programme, the integration of various data to characterize human settlements is key, and includes:</li> <li>1. Nighttime Lights as a Proxy for Development Using SDGSat-1 VIIRS, Luojia-1, and historical DMSP-OLS data to map urban expansion, economic activity, and electrification. Case studies on informal settlements, energy access (SDG 7), and poverty indicators (SDG 1).</li> <li>2. SDG 11 Indicators from Space SDG 11.3.1 (Land Use Efficiency): Quantifying urban sprawl vs. population growth. SDG 11.6 (Air Quality): Correlating NTL with pollution hotspots.</li> <li>3. Integration with Multisource and multi-mission EO Data Combining NTL with Sentinel-2 (land cover), GHSL (settlements), Copernicus Services, and social media data for richer insights. AI-driven approaches to overcome NTL limitations (e.g.,</li> </ul> |

saturation, seasonal bias).

4. Showcasing best practices of Data integration to promote Earth Intelligence and actionable insights by the SDG11 Custodian Agency.