Chao-Han LIU
Distinguished Scholar, Academia Sinica
Foreign Associate, U. S. National Academy of Engineering (2012)
Chairman, Southeast Asian Regional Committee for START (SARCS), 2000-

After receiving his Ph.D. from Brown University in1965, Prof. Chao-Han Liu started his academic career at the University of Illinois (Urbana-Champaign) in 1965 where he taught Electrical Engineering for 25 years before returning to Taiwan in 1990.

Dr. Liu is a pioneer in solar-terrestrial physics and remote sensing research, and one of the founders of Taiwan's space program. He proposed and guided the implementation of Taiwan's Constellation Observation System for Meteorology Ionosphere and Climate, (COSMIC/FORMOSAT-III), in collaboration with the University Corporation for Atmospheric Research (UCAR) and the Jet Propulsion Laboratory (JPL) in the US. This system, launched in April 2006, is a 6-satellite constellation using a radio occultation technique that revolutionized remote sensing of the Earth's atmosphere.

Dr. Liu's work has led to the daily collection of up to 2500 pieces of calibrated high-vertical resolution data for atmospheric temperature and humidity profiles over the globe, and enabled the daily weather forecast to be drastically improved for time scales greater than 36 hours for wind and precipitation forecasts using global computer models. Almost all major weather centers, including the US National Weather Services and the European Center for Medium Range Weather Forecast use COSMIC/FORMOSAT-III data for their forecasting operations. Due to its success, the National Oceanic and Atmospheric Administration *(*NOAA*)* and Taiwan's Space Program Office have signed an agreement for a follow-up mission beginning in 2015. Dr. Liu's pioneering contributions and leadership in space remote sensing have established Taiwan as a small but successful space and remote sensing center with active participation from local industry and universities.

Dr. Liu also innovated a versatile and inexpensive technology known as "Computerized Ionosphere Tomography" which was adopted for the remote sensing of ionospheres. Earlier in his career, Dr. Liu developed a scintillation theory, including the effects of multiple scattering, and made seminal contributions to pulse propagation problems in turbulent media, critical to understanding interaction of radio waves and the atmosphere. Dr. Liu also established a VHF Radar system at National Central University to investigate atmospheric waves and turbulence. Through his work in solar-terrestrial physics he has established himself as a leader in international space weather research.

Since the mid-1990s, Dr. Liu has led a group of scientists with different disciplinary backgrounds to carry out global change and sustainability research in Taiwan and established Taiwan as a regional leader in this field internationally.