



## X COLAGE - Scientific program

September 8 – 12, 2014 - Cusco, Peru

### Monday Sep 8, 2014 – Inaugural Session

|                      |                              |         |                               |                 |
|----------------------|------------------------------|---------|-------------------------------|-----------------|
| <b>08:30 - 09:00</b> | Introduction to the X COLAGE |         |                               |                 |
| <b>09:00 - 10:00</b> | Sami                         | Solanki | Perspectives in solar physics | Plenary<br>Talk |

### Monday Sep 8, 2014

#### Session 1a: The Sun and solar-terrestrial interactions

|                      |                |                  |   |         |
|----------------------|----------------|------------------|---|---------|
| <b>10:30 - 10:50</b> | Mark           | Miesch           | 3D Modeling of the Solar Dynamo   | Invited |
| <b>10:50 - 11:05</b> | Marcelo        | López Fuentes    | Active regions twist from magnetic tongues and force-free coronal models  | Oral    |
| <b>11:05 - 11:25</b> | Eduard         | Kontar           | Solar Flare Models And Observations   | Invited |
| <b>11:25 - 11:40</b> | Francisco      | Fernandes        | Radio signature of shock wave driven by solar flare without association with CME                                    | Oral    |
| <b>11:40 - 11:55</b> | María Victoria | Gutierrez Escate | Sympathetic Flares at SubTHz Frequencies  | Oral    |
| <b>11:55 - 12:10</b> | Jose Francisco | Valdés Galicia   | Performance of the SciBar Cosmic Ray Telescope toward the detection of high energy solar neutrons in Solar Cycle 24 | Oral    |
| <b>12:10 - 12:25</b> | Luis Xavier    | González         | Simulation of the Solar Neutrons in the Earth's Atmosphere  | Oral    |

### Monday Sep 8, 2014

#### Session 1b: The Sun and solar-terrestrial interactions

|                      |                |                  |  |         |
|----------------------|----------------|------------------|--|---------|
| <b>14:00 - 14:20</b> | Alberto Marcos | Vasquez          | Seeing The Solar Corona in Three Dimensions  | Invited |
| <b>14:20 - 14:40</b> | Marilena       | Mierla           | The CMEs morphology and their low coronal origin   | Invited |
| <b>14:40 - 14:55</b> | Shi            | Wu               | Formation, Eruption and Propagation of an Observed Active Region Sigmoid (Flux-Rope) as the Initiation of a CME using a Data-Driven Three-Dimensional Magneto-hydrodynamic Model | Oral    |
| <b>14:55 - 15:10</b> | Hebe           | Cremades         | Coronal Mass Ejection Production from the 11121 and 11123 Active Region Cluster  | Oral    |
| <b>15:10 - 15:25</b> | Laura          | Balmaceda        | 3D reconstruction and propagation of deflected CMEs using ground- and space-based data   | Oral    |
| <b>15:25 - 15:40</b> | Heidy          | Gutiérrez        | Multispectral Study of Coronal Hole and the Associated Large Filament Eruption   | Oral    |
| <b>15:40 - 15:55</b> | Juan Americo   | Gonzalez Esparza | Detection of Solar Wind Disturbances. MEXART IPS Observations  | Oral    |
| <b>15:55 - 16:10</b> | Julio Cesar    | Gianibelli       | Long Period Variations Of The Kinetic Energy Of The Solar Wind   | Oral    |



| <b>Monday Sep 8, 2014</b>           |                         |          |  |         |
|-------------------------------------|-------------------------|----------|--|---------|
| <b>Session 3: The Magnetosphere</b> |                         |          |  |         |
| <b>16:30 - 16:50</b>                | Anton Heinrich Bernhard | Otto     | The Substorm growth phase: Current Sheet Thinning, Ionospheric Morphology, and Reconnection              | Invited |
| <b>16:50 - 17:10</b>                | Juan Alejandro          | Valdivia | Thermally induced Magnetic fluctuations: can they be relevant in the magnetosphere                       | Invited |
| <b>17:10 - 17:30</b>                | Ramón                   | Lopez    | How the forces on the magneto-sheath flow control the dayside reconnection rate                          | Invited |
| <b>17:30 - 17:45</b>                | Natalia                 | Romanova | Monitoring of the plasma density in the inner magnetosphere using the ground-based ULF wave measurements | Oral    |

| <b>Tuesday Sep 9, 2014 – Plenary Talk</b> |           |         |                      |              |
|---|-----------|---------|----------------------|--------------|
| <b>08:30 - 09:30</b>                      | Ronald F. | Woodman | 3D Geography of Peru | Plenary Talk |

| <b>Tuesday Sep 9, 2014</b>                         |        |            |   |         |
|--|--------|------------|---|---------|
| <b>Session 2a: The Heliosphere and Cosmic Rays</b> |        |            |   |         |
| <b>09:30 - 09:50</b>                               | John   | Richardson | Voyager Observations from the edge of the Heliosphere | Invited |
| <b>09:50 - 10:10</b>                               | Hernán | Asorey     | The Latin American Giant Observatory (LAGO) Project   | Invited |
| <b>10:10 - 10:30</b>                               | Joseph | Borovsky   | Are the Solar-Wind Fluctuations Turbulence?           | Invited |

| <b>Tuesday Sep 9, 2014</b>                         |                |              |  |         |
|--|----------------|--------------|--|---------|
| <b>Session 2b: The Heliosphere and Cosmic Rays</b> |                |              |  |         |
| <b>11:00 - 11:20</b>                               | Hebe           | Cremades     | Space weather prediction tools based on low-frequency type II radio emissions  | Invited |
| <b>11:20 - 11:35</b>                               | Nat            | Gopalswamy   | Interplanetary Consequences of Anomalous Expansion of CMEs during Solar Cycle 24   | Oral    |
| <b>11:35 - 11:50</b>                               | Julio Cesar    | Mejia-Ambriz | Remote sensing of solar wind speeds by Interplanetary Scintillation using MEXART and STEL  | Oral    |
| <b>11:50 - 12:05</b>                               | Carlos Roberto | Braga        | Study of interplanetary magnetic structures and its associated coronal mass ejections using cosmic ray observations from the Global Muon Detector Network and from coronagraphs SECCHI and LASCO (presented by Alisson dal Lago) | Oral    |
| <b>12:05 - 12:20</b>                               | Jimmy Joel     | Masías Meza  | Linking Forbush decreases with Magnetic Clouds properties. A statistical study   | Oral    |
| <b>12:20 - 12:35</b>                               | Mauricio       | Suárez       | The rigidity cut-off calculation method for the sites of the LAGO project  | Oral    |
| <b>12:35 - 12:50</b>                               | Marco          | Barrantes    | Methods for differentiation of particles detected by the SciCRT  | Oral    |



| <b>Tuesday Sep 9, 2014</b>                                 |               |               |   |         |
|--|---------------|---------------|---|---------|
| <b>Session 4a: The Ionosphere and the Upper Atmosphere</b> |               |               |   |         |
| <b>14:00 - 14:20</b>                                       | Cesar         | Valladares    | Observations of low- and mid-latitude TEC depletions & Scintillations   | Invited |
| <b>14:20 - 14:35</b>                                       | Marco A.      | Milla         | New capabilities of the Jicamarca radar and its cluster of instruments  | Oral    |
| <b>14:35 - 14:50</b>                                       | Paulo Roberto | Fagundes      | Ionosphere and the upper atmosphere coupling during SSW   | Oral    |
| <b>14:50 - 15:05</b>                                       | Polinaya      | Muralikrishna | Langmuir Probe observations of abnormal electron temperatures in the valley region below the F-layer and their association with the equatorial plasma bubbles | Oral    |
| <b>15:05 - 15:20</b>                                       | Claudia       | Candido       | Ionospheric response to solar minimum conditions  | Oral    |
| <b>15:20 - 15:35</b>                                       | Danny         | Scipion       | Mesospheric winds obtained from simultaneous 30 MHz and 50 MHz All-Sky Specular Meteors at Jicamarca  | Oral    |

| <b>Wednesday Sep 10, 2014</b>                              |              |                  |  |         |
|--|--------------|------------------|--|---------|
| <b>Session 4b: The Ionosphere and the Upper Atmosphere</b> |              |                  |  |         |
| <b>08:30 - 09:30</b>                                       | Erhan        | Kudeki           | Tutorial on Incoherent and Coherent scatter radars   | Invited |
| <b>09:30 - 09:45</b>                                       | Paulo        | Batista          | Long-term temperature variation in the 35-65 km range at 23° S from 1993 to 2014                               | Oral    |
| <b>09:45 - 10:00</b>                                       | Igo          | Paulino          | Observation of gravity waves in the OI630 nm airglow emission over Brazil                                      | Oral    |
| <b>10:00 - 10:15</b>                                       | Lourivaldo   | Mota Lima        | Long-term Variations of Sporadic Meteor Parameters in the Low Latitude Southern Hemisphere                     | Oral    |
| <b>10:15 - 10:30</b>                                       | Ricardo Yvan | de La Cruz Cueva | Study Of Christmas Island Vhf Radar Spread F Observed During Low Solar Activity (2007 – 2010): Multiple Plumes | Oral    |

| <b>Wednesday Sep 10, 2014</b>                              |                |              |  |         |
|--|----------------|--------------|--|---------|
| <b>Session 4c: The Ionosphere and the Upper Atmosphere</b> |                |              |  |         |
| <b>11:00 - 11:20</b>                                       | Sixto          | Gonzalez     | Aeronomy at the Arecibo Observatory  | Invited |
| <b>11:20 - 11:35</b>                                       | Edgardo        | Pacheco      | Longitudinal variability of low-latitude plasma density irregularities during low solar activity   | Oral    |
| <b>11:35 - 11:50</b>                                       | Marcos         | Diaz         | Langmuir Decay Process: Enhancement of Ion Acoustic Line and first Langmuir harmonic in IS Radar Spectra   | Oral    |
| <b>11:50 - 12:05</b>                                       | Rebeca         | López Montes | Ionospheric disturbances associated with high energy solar events  | Oral    |
| <b>12:05 - 12:20</b>                                       | Gustavo Adolfo | Mansilla     | Some Ionospheric Storm Effects at high Latitudes   | Oral    |
| <b>12:20 - 12:35</b>                                       | Wojciech       | Miloch       | An integrated study of the ionospheric plasma turbulence by sounding rockets, satellites, and numerical simulations, within the 4DSpace project. | Oral    |
| <b>12:35 - 12:50</b>                                       | Enoch          | Elemo        | Ionospheric variability around the time of the largest earthquake in the Africa in the 20th century  | Oral    |



| <b>Thursday Sep 11, 2014</b>                       |             |                  |  |         |
|--|-------------|------------------|--|---------|
| <b>Session 5a: Space Weather and Space Climate</b> |             |                  |  |         |
| <b>08:30 - 08:50</b>                               | Blanca      | Mendoza          | The role of the Sun in climate change: results of the 5th Assessment Report of the Intergovernmental panel for Climate Change (IPCC) | Invited |
| <b>08:50 - 09:10</b>                               | Brigitte    | Schmieder        | Extreme Geoeffective events and their Solar Sources  | Invited |
| <b>09:10 - 09:25</b>                               | Sergio      | Dasso            | The role of Interplanetary Coronal Mass Ejections in Space Weather   | Oral    |
| <b>09:25 - 09:40</b>                               | Rashmi      | Rawat            | Characteristics of solar energetic particle events during rising and near-maximum phases of solar cycle 24                           | Oral    |
| <b>09:40 - 09:55</b>                               | Lela        | Taliashvili      | Long-Term Evolution of Filaments Associated with Emerging New Magnetic Flux  | Oral    |
| <b>09:55 - 10:10</b>                               | J. Americo  | Gonzalez Esparza | Space Weather Service in Mexico  | Oral    |
| <b>10:10 - 10:25</b>                               | Marta Maria | Zossi de Artigas | Energetic particles precipitation: effects over the Southern Hemisphere Stratosphere   | Oral    |

| <b>Thursday Sep 11, 2014</b>                       |               |                |  |         |
|--|---------------|----------------|--|---------|
| <b>Session 5b: Space Weather and Space Climate</b> |               |                |  |         |
| <b>11:00 - 11:20</b>                               | Joerg         | Buechner       | Models and numerical of Solar eruptions                        | Invited |
| <b>11:20 - 11:35</b>                               | Reinaldo      | Rosa           | Visual Analytics for Integrated Data Analysis In Space Science | Oral    |
| <b>11:35 - 11:50</b>                               | Román         | Pérez Enríquez | Space weather and the ionosphere over Mexico                   | Oral    |
| <b>11:50 - 12:05</b>                               | Julio Cesar   | Gianibelli     | The Synergistic Program Of Geomagnetism And Aeronomy           | Oral    |
| <b>12:05 - 12:20</b>                               | Walter Robert | Guevara Day    | Implementing System Peruvian Space Weather – SICEP             | Oral    |

| <b>Thursday Sep 11, 2014</b>                       |          |               |  |         |
|--|----------|---------------|--|---------|
| <b>Session 5c: Space Weather and Space Climate</b> |          |               |  |         |
| <b>14:00 - 14:20</b>                               | Grzegorz | Kowal         | Magnetic Turbulence and Magnetic Reconnection  | Invited |
| <b>14:20 - 14:35</b>                               | José     | Itshisuka     | Astronomical Facilities of Geophysical Institute of Peru                               | Oral    |
| <b>14:35 - 14:50</b>                               | Lucía    | Villanueva    | Lat/Long Morphology of March 13, 1989 Geomagnetic Storm, impact on HF Radio            | Oral    |
| <b>14:50 - 15:05</b>                               | Dennis   | Cazar Ramírez | Implementing a WCD detector system in Ecuador as part of the LAGO Project              | Oral    |
| <b>15:05 - 15:20</b>                               | Ramon    | Caraballo     | Geomagnetically Induced Currents at mid Latitudes: The Uruguayan Power Grid Case Study | Oral    |

| <b>Friday Sep 12, 2014</b>   |         |       |   |         |
|--|---------|-------|---|---------|
| <b>Session 6: Plasma Physics of Solar System, Planets and Exoplanets</b> |         |       |   |         |
| <b>08:30 - 08:50</b>   | Rosalyn | Lopes | Io's Volcanic Activity and the Jupiter System | Invited |



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|                      |                 |                 |  |         |
|----------------------|-----------------|-----------------|--|---------|
| <b>08:50 - 09:10</b> | Xochitl         | Blanco Cano     | Waves upstream of collisionless shocks in the heliosphere.   | Invited |
| <b>09:10 - 09:25</b> | Juan Alejandro  | Valdivia        | Ion cyclotron waves and thermal fluctuations   | Oral    |
| <b>09:25 - 09:40</b> | Adolfo F.       | Viñas           | The role of higher-order modes on the electromagnetic whistler-cyclotron wave fluctuations in the solar wind                 | Oral    |
| <b>09:40 - 09:55</b> | Pablo S.        | Moya            | Whistler-cyclotron wave fluctuations as a proxy to identify thermal and non-thermal electron distributions in the solar wind | Oral    |
| <b>09:55 - 10:10</b> | María Guadalupe | Cordero Tercero | Study of the dynamics of meteoroids through the Earth's atmosphere and retrieval of meteorites.                              | Oral    |
| <b>10:10 - 10:25</b> | Daniel          | Gómez           | Magnetic reconnection including Hall and electron inertia effects  | Oral    |
| <b>10:25 - 10:40</b> | Carlos F.       | Vazquez         | Mechanical design of a mount for observing meteors   | Oral    |

**Friday Sep 12, 2014**

**Session 7: Nonlinear Processes in Space Geophysics**

|                      |            |                 |   |         |
|----------------------|------------|-----------------|---|---------|
| <b>11:00 - 11:20</b> | Marina     | Stepanova       | Turbulence in the magnetosphere of the Earth and its relevance for magnetospheric dynamics                    | Invited |
| <b>11:20 - 11:40</b> | Erico Luiz | Rempel          | Detection of Lagrangian coherent structures in solar flows  | Invited |
| <b>11:40 - 12:00</b> | Vera       | Jatenco Pereira | Damping of Alfvén waves as a mechanism to decrease the dead zone size limits in proto-stellar accretion disks | Invited |
| <b>12:00 - 12:15</b> | Joseph     | Borovsky        | The Solar Wind Driving of the Magnetosphere: Creating a Stock Market of Earth Measurements                    | Oral    |
| <b>12:15 - 12:30</b> | Joerg      | Buechner        | Nonlinear kinetic instabilities of current sheets   | Oral    |