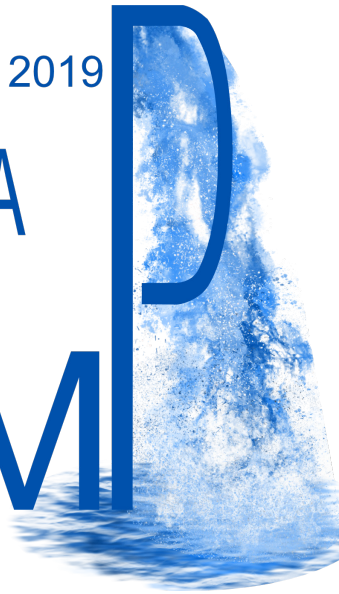


September 9-13 2019

GENEVA

CEMP



CEMP Stars as Probes of First-Star Nucleosynthesis,  
the IMF, and Galactic Assembly

# PROGRAM

University of Geneva, Science II, A100

<https://indico.cern.ch/e/CEMPNO>

# Monday 09 September 2019

## Registration (08:30-09:00)

## Welcome from the LOC & SOC (09:00-09:10)

- Presenters: EKSTRÖM, Sylvia (Université de Genève); HIRSCHI, Raphael (Keele University )

## OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 1 (Chair: Cristina Chiappini)

(09:10-10:40)

time	title	presenter
09:10	CEMP Stars – Past Perspectives and Future Objectives	BEERS, Timothy (University of Notre Dame)
09:40	Observations of very iron-poor stars	BONIFACIO, Piercarlo (GEPI, Observatoire de Paris, Université PSL, CNRS)
10:10	3D non-LTE chemical abundance measurements for CEMP stars	AMARSI, anish

## coffee break (10:40-11:00)

## OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 2 (Chair: Camilla Hansen)

(11:00-12:30)

time	title	presenter
11:00	CNO abundances in the early Galaxy	ANTONY, Susmitha Rani (Tata Institute of Fundamental Research Mumbai)
11:20	Accurate abundances at the lowest detected iron abundance: SMSS 1605-1443	NORDLANDER, Thomas (Australian National University)
11:40	Detailed abundance analysis of new CEMP stars from HESP-GOMPA survey	AVRAJIT, Bandyopadhyay (Indian Institute of Astrophysics, Bangalore)
12:00	Looking for the most metal-poor stars with large surveys	AGUADO, David (University of Cambridge, UK)

## lunch break (12:30-14:00)

## OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 3 (Chair: David Yong)

(14:00-15:30)

time	title	presenter
14:00	CEMP Stars as Probes of First-Star Nucleosynthesis, the IMF, and Galactic Assembly	ELSE, Starkenburg (Heidelberg)
14:30	Tracing the formation of the Milky Way through UMP and EMP stars	SESTITO, Federico (Observatoire Astronomique de Strasbourg)
14:50	The Metallicity Gradient in the Outer Halo of the Milky Way	DIETZ, Sarah

15:10	Observations of 200 New CEMP Stars from the South African Large Telescope	RASMUSSEN, Kaitlin (University of Notre Dame)
-------	---	--

**coffee break (15:30-16:00)****OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 4 (Chair: Thomas Masseron)****(16:00-17:10)**

time	title	presenter
16:00	The Pristine Survey: High-resolution spectroscopy and kinematics of new extremely metal-poor stars	KIELTY, Collin (University of Victoria)
16:20	CEMP-no and the early chemical enrichment of the Milky Way	CHIAPPINI, Cristina (Leibniz-Institut für Astrophysik Potsdam (AIP))
16:50	3D carbon and oxygen abundances in CEMP stars from molecular lines	KUČINSKAS, A. (Vilnius University, Lithuania)

**Short poster presentations (17:10-17:40)****Wine & cheese party (17:40-19:00)**

## Tuesday 10 September 2019

### **OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 5 (Chair: Tim Beers)**

**(09:00-10:20)**

time	title	presenter
09:00	Very Iron-poor Stars and an Update of the SkyMapper Extremely Metal-Poor Star Program	YONG, David (Australia)
09:30	CEMP stars in dwarf galaxies	SKULADOTTIR, Asa (Heidelberg, Germany)
10:00	Abundances and Kinematics of CEMP stars - A new classification	HANSEN, Camilla Juul

**coffee break (10:20-10:50)**

### **OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 6 (Chair: Stefania Salvadori)**

**(10:50-12:30)**

time	title	presenter
10:50	Binarity among CEMP-no stars: an indication of multiple formation pathways?	ARENTSEN, Anke
11:10	Putting CEMP-s stars into context: the swan songs of stars as recorded by their binary companions	NORTH, Pierre (Ecole Polytechnique Fédérale de Lausanne (EPFL))
11:30	Seeking the origin of CEMP-r/s stars	NORDSTRÖM, Birgitta (Niels Bohr Institute, Copenhagen, Denmark)
11:50	Multiplicity of the first stars from machine learning-based classification of stellar fossils	HARTWIG, Tilman (University of Tokyo)
12:10	The binarity of dwarf carbon stars and their possible role as main sequence counterparts to CEMP stars	WHITEHOUSE, Lewis (University College London)

**lunch break (12:30-14:00)**

### **OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 7 (Chair: Arunas Kucinkas)**

**(14:00-15:20)**

time	title	presenter
14:00	Origin of CEMP-no morphology in the Milky Way halo	YOON, Jinmi
14:20	Dynamical Relics with Chemically Peculiar Stars from Ancient Small Dwarf Galaxies	YUAN, Zhen (Shanghai Astronomical Observatory, CAS)
14:40	Chemodynamical Analysis of Six Low-Metallicity Stars in the Halo System of the Milky Way	MARDINI, Mohammad (National Astronomical Observatories of China)
15:00	Constraining nucleosynthesis in CEMP-s progenitors using Fluorine	MURA GUZMAN, Aldo (Australian National University)

**coffee break (15:20-15:50)**

**OBSERVATIONAL APPROACH: CEMP STARS, FIRST STARS, FIRST GALAXIES: 7 continued (Chair: Arunas Kucinskas) (15:50-16:20)**

time	title	presenter
15:50	Chemical enrichment and ionizing escape fraction from observations of GRBs	TANVIR, Nial (University of Leicester)

**THEORETICAL APPROACH TO CEMP STARS, FIRST STARS, AND FIRST GALAXIES: 1 (Chair: Sylvia Ekström) (16:20-17:50)**

time	title	presenter
16:20	The First Stars: Our Emerging Theoretical Framework	BROMM, Volker (USA)
16:50	Fragmentation Condition in a Primordial Accretion Disk	LIAO, Wei-Ting (University of Illinois at Urbana-Champaign)
17:10	Thermodynamics of H <sub>2</sub> in the context of the First Stars	SHARDA, Piyush (Australian National University)
17:30	Surviving Pristine Stars and the Implications of their Non-detection Paper Number	MAGG, Mattis (Universität Heidelberg)

## Wednesday 11 September 2019

### **THEORETICAL APPROACH TO CEMP STARS, FIRST STARS, AND FIRST GALAXIES: 2 (Chair: Else Starkenburg) (09:00-10:30)**

time	title	presenter
09:00	The variety of CEMP-no abundances: back-and-forth mixing between H- and He-burning	MAEDER, André (Geneva University)
09:30	Probing the rotation of early massive stars from the abundances of metal-poor stars	CHOPLIN, Arthur (Konan University)
09:50	Mechanical mass loss in very metal poor massive stars	MARTINET, Sébastien (Geneva University)
10:10	An Alternative Progenitor Scenario for the Most Iron-poor CEMP-no Stars.	CLARKSON, Ondrea

### **coffee break (10:30-11:00)**

### **THEORETICAL APPROACH TO CEMP STARS, FIRST STARS, AND FIRST GALAXIES: 3 (Chair: Raphael Hirschi) (11:00-13:10)**

time	title	presenter
11:00	The origin of CEMP-i stars - Results from a comprehensive multi-method simulations approach	HERWIG, Falk (University of Victoria)
11:20	A new grid of Geneva stellar evolution models for Population-III stars	MURPHY, Laura (Trinity College Dublin)
11:40	Low-mass primordial stars: i-process nucleosynthesis during core-flash proton ingestion episodes?	CAMPBELL, Simon (Monash University)
12:00	r-Process Sites, their Ejecta Composition, and their Imprint in Galactic Chemical Evolution	THIELEMANN, Friedrich-K. (University of Basel and GSI Darmstadt)
12:30	Observational Evidence for Aspherical Jet-Like Population III Supernova Explosion	EZZEDDINE, Rana (Massachusetts Institute of Technology)
12:50	CEMP star formation from faint supernova explosions	CHIAKI, Gen

### **lunch break (13:10-14:00)**

### **Free afternoon / excursion (14:00-17:00)**

## Thursday 12 September 2019

### **THEORETICAL APPROACH TO CEMP STARS, FIRST STARS, AND FIRST GALAXIES: 4 (Chair: André Maeder)**

**(09:00-10:30)**

time	title	presenter
09:00	Simulating and Observing the First Galaxies	WISE, John (Georgia Institute of Technology)
09:30	Building-up Pop III IMF in the Milky Way-like galaxies	HIRANO, Shingo (Kyushu University)
10:00	First star mass distribution: empirical constraints	STEFANIA, Salvadori (University of Florence, Italy)

**coffee break (10:30-11:00)**

### **THEORETICAL APPROACH TO CEMP STARS, FIRST STARS, AND FIRST GALAXIES: 5 (Chair: Volker Bromm)**

**(11:00-12:20)**

time	title	presenter
11:00	Connecting the first galaxies with ultra faint dwarfs in the Local Group	MYOUNGWON, Jeon (Korea)
11:30	Exploring the stellar ionising continuum of galaxies in the context of cosmic reionisation	VERHAMME, Anne (UNIGE)
12:00	CEMP stars: their origin and connection with stars that reionized the Universe	SHARMA, Mahavir

**lunch break (12:20-14:00)**

### **FUTURE PERSPECTIVES, CHEMICAL EVOLUTION, LARGE SURVEYS: 1 (Chair: Shingo Hirano) (14:00-15:40)**

time	title	presenter
14:00	Multi-dimensional modelling of stellar interiors	HIRSCHI, Raphael (Keele University )
14:30	Asteroseismology and transport processes in stellar interiors	EGGENBERGER, Patrick (Geneva University)
15:00	Asteroseismology and high-resolution spectroscopy of halo stars	MATSUNO, Tadafumi
15:20	New light on the Sun: Updates on helioseismology and the Solar modelling problem	BULDGEN, Gaël (Université de Genève)

**coffee break (15:40-16:10)**

### **FUTURE PERSPECTIVES, CHEMICAL EVOLUTION, LARGE SURVEYS: 2 (Chair: John Wise) (16:10-17:00)**

time	title	presenter
16:10	Probing the early Universe with black hole binaries	FRAGOS, Tassos
16:40	Life and death of supermassive stars	HAEMMERLÉ, Lionel (Université de Genève)

**General discussion (17:00-17:40)**

**Conference dinner (18:30-22:00)**



# Friday 13 September 2019

## **FUTURE PERSPECTIVES, CHEMICAL EVOLUTION, LARGE SURVEYS: 3 (Chair: Beatriz Barbuy) (09:00-09:50)**

time	title	presenter
09:00	Modeling the first stages of galaxy formation	JABLONKA, Pascale (EPFL - EPF Lausanne)
09:30	Formation and Evolution of Milky Way Galaxy: Abundance trends of stable and short-lived nuclides	KAUR, Tejpreet (Department of Physics, Panjab University, Chandigarh)

### **coffee break (09:50-10:20)**

## **FUTURE PERSPECTIVES, CHEMICAL EVOLUTION, LARGE SURVEYS: 4 (Chair: Nial Tanvir) (10:20-11:20)**

time	title	presenter
10:20	The Galactic bulge and old stellar populations	BARBUY, Beatriz
10:50	Extremely metal-poor stars in the next generation large surveys	HILL, Vanessa (France)

### **Concluding discussion (11:20-12:00)**

### **END OF THE CONFERENCE (12:00-12:05)**