

# DARK MATTERS 11-13 December 2017

## Joe Silk's 75th Birthday

### MONDAY, DECEMBER 11<sup>TH</sup>

8:30 AM Registration

Chair: **Jean AUDOUZE**

9:30 AM Welcome

9:45 AM What Joe has taught us?

**Francis BERNARDEAU**  
**Nicola VITTORIO**

#### Session I: Galaxy Formation

Chair: **Arif BABUL**

10:15 AM Scaling Laws for Dark Halos of Galaxies

10:45 AM The Magic Scale of Galaxy Formation: Supernova Feedback, Hot Halo, Black-Hole Growth and Compaction to a Blue Nugget

**Kenneth FREEMAN**  
**Avishai DEKEL**

11:15 AM COFFEE BREAK

Chair: **Sadegh KHOCHFAR**

11:45 AM The symphony of quasar and stellar feedback

12:00 PM The manifold nature of AGN feedback from 3D simulations

12:15 PM Kinematics and dynamics of molecular gas in galaxies

12:30 PM Dark matter or modified gravity?

**Rebekka BIERI**  
**Salvatore CIELO**  
**Alessandro LUPI**  
**Françoise COMBES**

13:00 PM LUNCH BREAK

2:45 PM ROUND TABLE: Ian MCCARTHY, Marc HUERTAS-COMPANY, Evan SCANNAPIECO, Rosemary WYSE

#### Session II: Dark Matter

Chair: **Emmanuel MOULIN**

3:30 PM Particle Candidates for Dark Matter

4:00 PM Dark Matter Indirect Detection, a review of all the early ideas by Joe that still keep us busy

**John ELLIS**  
**Marco CIRELLI**

4:30 PM COFFEE BREAK

5:00 PM Nonlinear structure in the dark matter distribution

5:30 PM Probing dark matter around black holes at the centers of galaxies

5:45 PM Massive Black holes from dissipative Dark Matter

**Simon WHITE**  
**Thomas LACROIX**  
**Paolo PANCI**

6:00 PM END

6:15 PM COCKTAIL (Cassini Room of the Observatoire de Paris)

### TUESDAY, DECEMBER 12<sup>TH</sup>

Chair: **Bernard CARR**

9:30 AM ROUND TABLE: Céline BOEHM, Stéphane COLOMBI, Keith OLIVE, Pierre SALATI

## Session III: Large-Scale Structure

Chair: **Henry Joy McCracken**

10:15 AM	Analytic models of large-scale structure	<b>Martin WHITE</b>
10:45 AM	<b>CONFERENCE PHOTO &amp; COFFEE BREAK</b>	
11:15 AM	Connecting the cosmic web to galaxy formation	<b>Christophe PICHON</b>
11:45 AM	Cosmology from large scale structure	<b>Benjamin WANDEL</b>
12:15 PM	<b>LUNCH BREAK</b>	
2:15 PM	<b>ROUND TABLE: August EVRARD, Nick KAISER, Alexander SZALAY</b>	

## Session IV: Cosmic Microwave Background

Chair: **Jérôme MARTIN**

3:00 PM	Cosmology after Planck	<b>François BOUCHET</b>
3:30 PM	Evidences for inflation, constraints on alternatives	<b>Patrick PETER</b>
4:00 PM	The next generation of ground based CMB experiments	<b>Thibaut LOUIS</b>
4:15 PM	<b>COFFEE BREAK</b>	

Chair: **Glenn STARKMAN**

4:45 PM	<b>ROUND TABLE: Nabila AGHANIM, Douglas SCOTT, Naoshi SUGIYAMA</b>	
5:30 PM	Counterfactual universes (special talk)	<b>Martin REES</b>
6:00 PM	<b>END</b>	

# WEDNESDAY, DECEMBER 13<sup>TH</sup>

## Session V: Gravitational Waves

Chair: **Martin HAEHNELT**

9:00 AM	Gravitational Wave Astronomy and Cosmology	<b>Bernard SCHUTZ</b>
9:30 AM	Gravitational Waves and Theory	<b>Luc BLANCHET</b>
10:00 AM	Studying stellar evolution with gravitational wave observations	<b>Irina DVORKIN</b>
10:15 AM	<b>CONFERENCE PHOTO &amp; COFFEE BREAK</b>	

Chair: **Maria Angeles PEREZ-GARCIA**

10:45 AM	Massive black holes and gravitational waves	<b>Marta VOLONTERI</b>
11:15 AM	<b>ROUND TABLE: Bruce ALLEN, Enrico BARAUSSE, Guillaume FAYE, Samaya NISSANKE</b>	
12:00 PM	<b>LUNCH BREAK</b>	

Chair: **Mario LIVIO**

1:30 PM	LCDM: Much more than we expected, but now less than what we want (special talk)	<b>Michael TURNER</b>
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## Session VI: Limits of Cosmology

2:00 PM	Limits on cosmology as a testable science	<b>George ELLIS</b>
2:30 PM	The future of empirically established cosmology	<b>Jim PEEBLES</b>
3:00 PM	<b>ROUND TABLE: Alain BLANCHARD, Katherine FREESE, Marc KAMIONKOWSKI, Rocky KOLB, Adi NUSSER</b>	
3:45 PM	<b>COFFEE BREAK</b>	

## Session VII: Conclusions

Chair: **Michael ROWAN-ROBINSON**

4:15 PM	Conclusion	<b>Joe SILK</b>
4:45 PM	<b>END</b>	
7:30 PM	<b>DINNER-CRUISE (La Compagnie des Bateaux-Mouches)</b>	