


Geomechanics from Micro to Macro:

A wonderful journey

We walked a long way...

Early History

- 
- 1973 Angemeer et al. report pile skin friction values as low as 10% of those expected for offshore piles in carbonate sands in the Bass Strait.
 - 1980 North Rankin A offshore production platform in Western Australia – insufficient pile capacity in carbonate sands
 - 1985 UWA Perth Conference on carbonate sands
 - 1986 Prof. Bolton published “Strength and dilatancy of Sands” Geotechnique
 - 1990 Prof. Coop published “The Mechanics of Uncemented Carbonate Sand” Geotechnique
 - 1995 Prof. Yasufuku & Hyde published "Pile end-bearing capacity in crushable sands" Geotechnique
 - 1997 Prof. Hyde organised the First International Workshop on Soil Crushability at University of Sheffield.

We are proud of ourselves

since we are one of the earliest groups that broaden human's mind on multiple-scale phenomena in nature.

TC 35 Geotechnics of Particulate Media

- 2001 ICSMGE Istanbul TC 35 Formed
- 2005 ICSMGE Osaka Second Cycle
- 2006 International Symposium IS-Yamaguchi '06 Geotechnics and Geomechanics of Particulate Media

TC 105 Geo-Mechanics from Micro to Macro

- 2003, 2004, 2005 UK travelling workshops (Birmingham, Cambridge, London, Bristol).....
- 2009 ICSMGE Alexandria TC105 formed
- 2010 IS-Shanghai at Tongji University, The First International Symposium on Geomechanics from Micro to Macro
- 2013 IS-Hong Kong Joint workshop with TC101
- 2013 ICSMGE Paris Discussion session and Workshop

We saw wonderful places side by side...



▲ IS-Yamaguchi 2006



▲ IS-Shanghai 2010



Experimental Micromechanics for Geomaterials
Joint workshop of the ISSMGE TC101-TC105
May 23-24, 2013
The University of Hong Kong



◀ IS-Hongkong 2013

Finally we reach Cambridge !



IS-Cambridge 2014

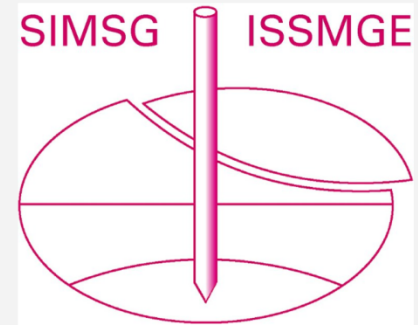
1 - 3 September 2014. Cambridge, UK.

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Welcome to the International Symposium on Geomechanics from Micro to Macro



SIMSG ISSMGE



International Society for Soil
Mechanics and Geotechnical
Engineering



We grew up

280+ delegates



We covered a wide range of age...

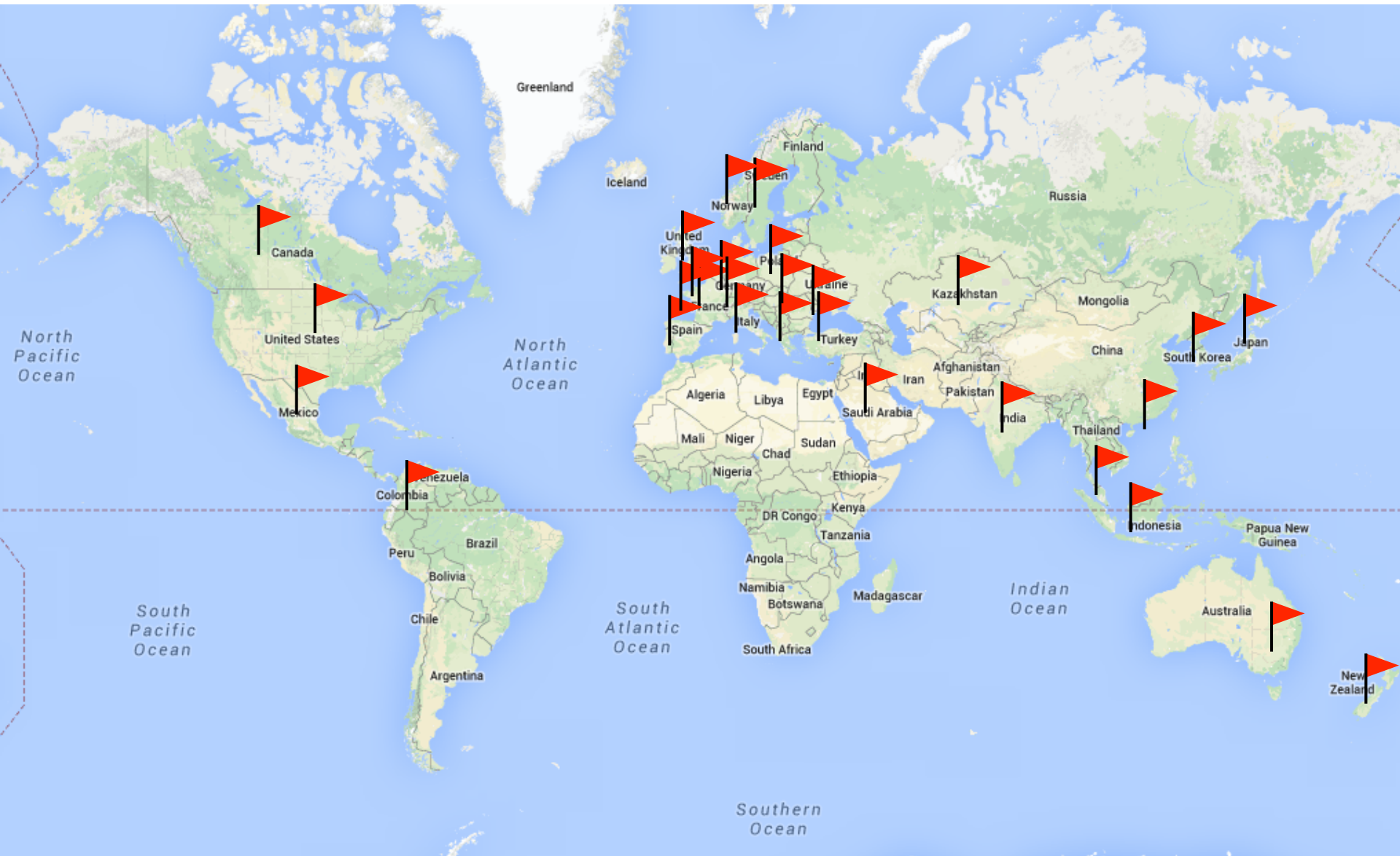


and all genders.



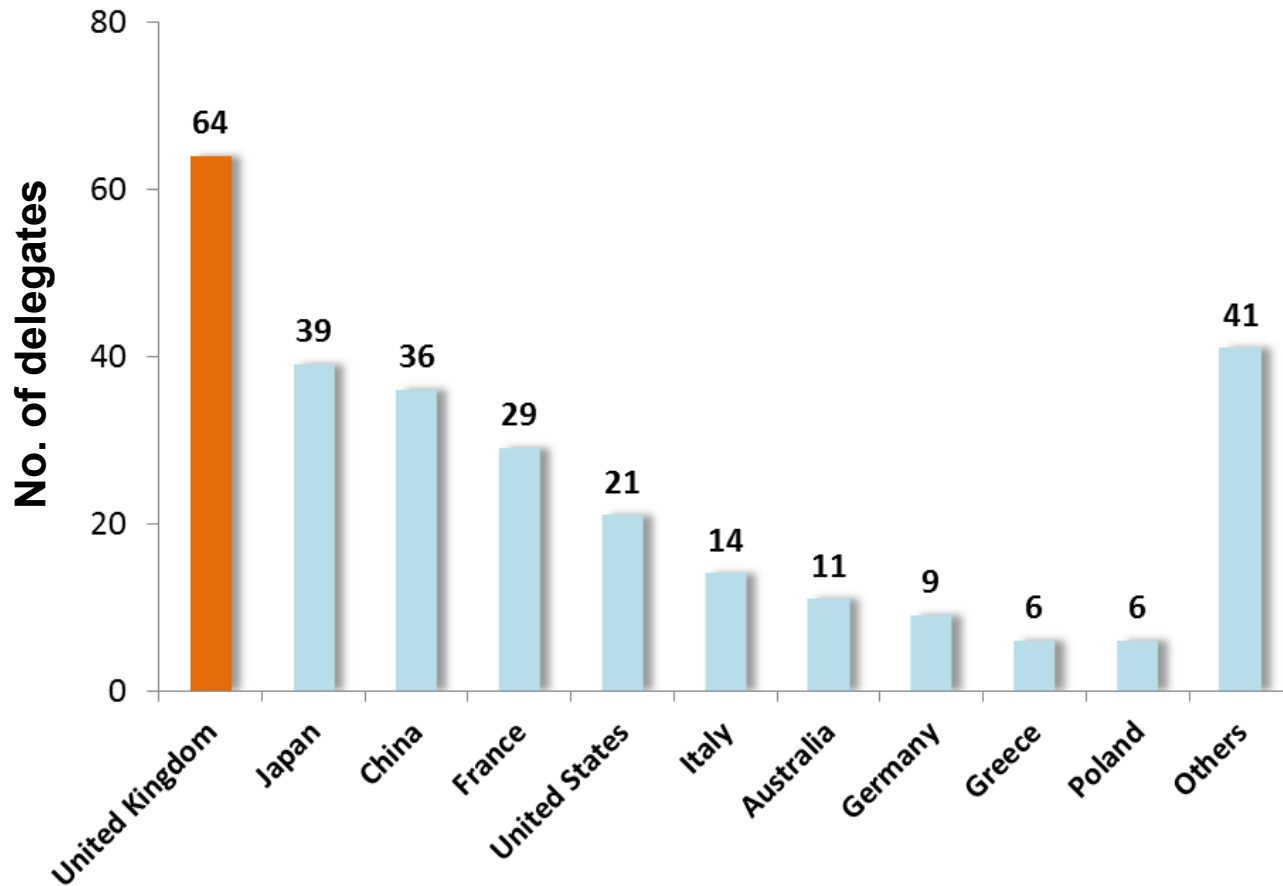
and we found

We are influencing the world...



Distribution of the over 280 delegates of IS-Cambridge

In this 30-country-involved gathering
British won the medal...



We are interested in a very broad field

Part I: Discrete-based modelling

of papers

■ Pre-failure behaviour	13
■ Post-failure behaviour	9
■ Particle shape and size effects	11
■ Particle crushing	10
■ Dynamic behaviour	6
■ Behaviour of bonded materials	11
■ Fractureing and fragmentation	3
■ Interface behavior	5
■ Fluid coupling	14
■ Applications	11

267 accepted papers

Part II: Continuum-based modelling

■ Constitutive modelling	22
■ Multi-scale modelling	10
■ Multiphase modelling	10
■ Fluid flow modelling	8
■ Numerical modelling – continuum based methods	6
■ Numerical modelling – particle based methods	8

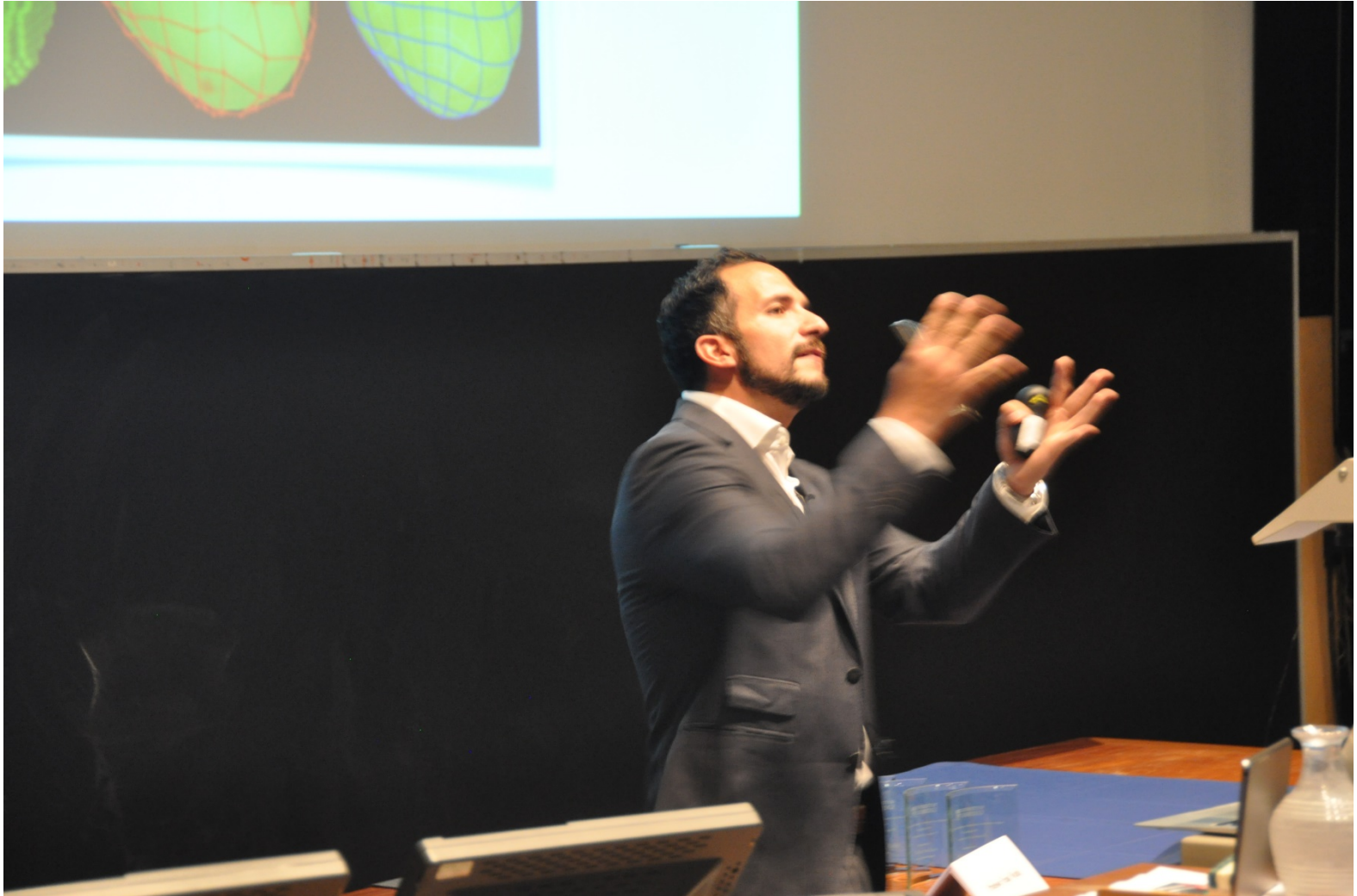
Part III: Experiment-based investigation

■ Micro-scale experiments	9
■ Particle effects	10
■ Non-destructive imaging	9
■ Characterisation – coarse grained materials	13
■ Characterisation – fine grained materials	10
■ Mixtures	14
■ Partial saturation	10
■ Fluid-grain coupling	6
■ Biological and chemical effects	8
■ Thermal effects	2
■ Observations from physical model tests and field tests	16

**We are heading to solve the
core and challenging
problems in geomechanics
and geotechnical
engineering,
and we are getting there...**

We enjoyed talking

- Keynote lectures 9
- Parallel sections 15
- Oral presentations 107
- Young's oral presentations 66



We enjoyed listening



and also poster.

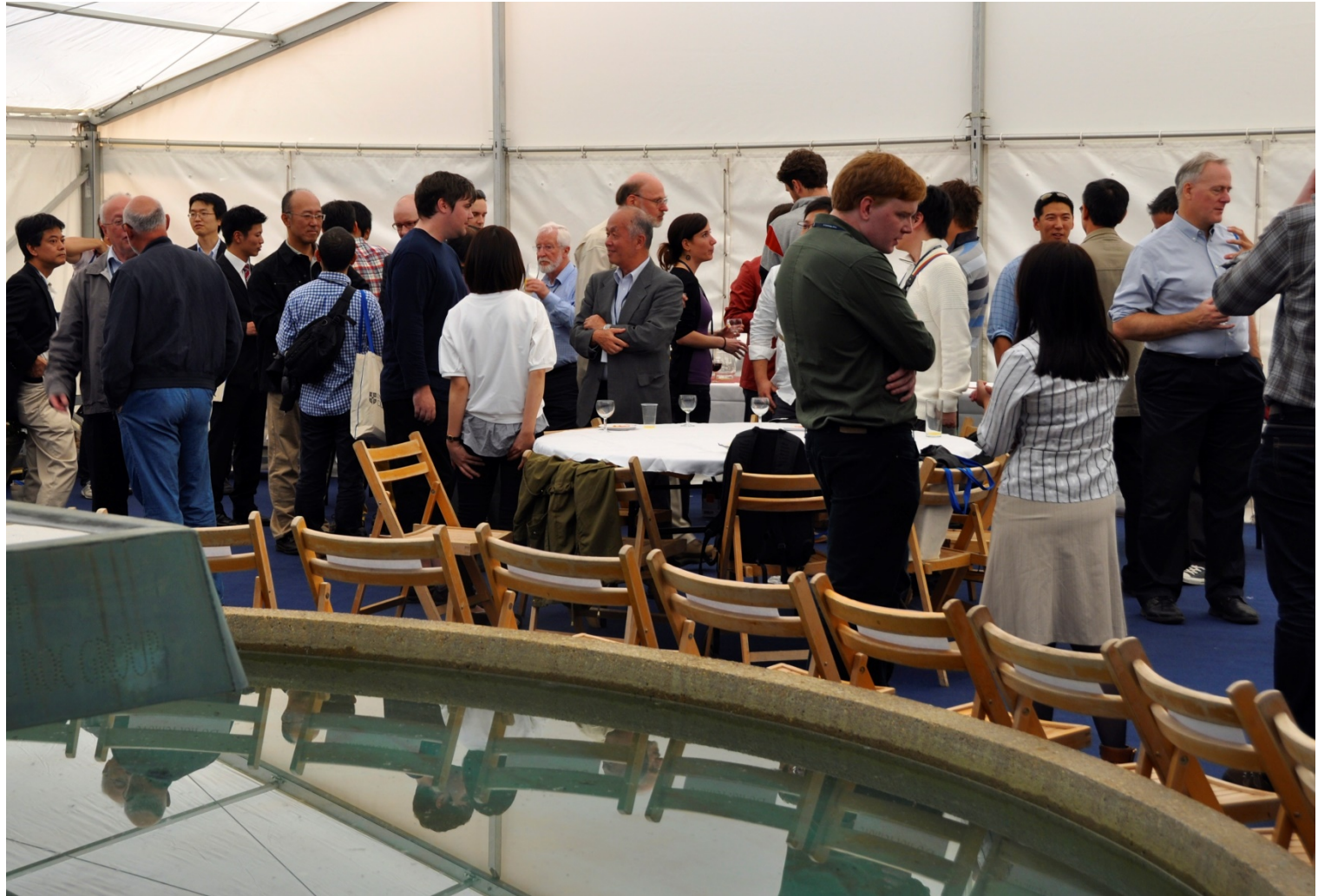
124 poster presentations



We met old friend,



and also made new ones.



We enjoyed the food...with more meat!



We enjoyed the dinner, traditional British one ?



During the days

We also worked very hard



Thanks to our blue T-shirts

Special thank to our host

Prof. Kenichi Soga



More specially... our photographer
who make it so unforgettable.



Amanda Pyatt

and other people helped:

Anama Lowday

Jen Flack

We have to thank an important person
who make all these happen...

Prof. Malcolm Bolton

in IS-Shanghai 2010 at Tongji University



Our journey continues...

I hope we meet in the next destination !

