



Gabinete de Promoção do Programa Quadro



UNIVERSIDADE DO PORTO  
UNIVERSITY OF PORTO

## *Ações Marie Skłodowska-Curie (MSCA) do Horizonte 2020*

### **Infoday MSCA**

### **ITN (Innovative Training Networks) & RISE (Research and Innovation Staff Exchange)**

Salão Nobre, Reitoria da Universidade do Porto  
Praça Gomes Teixeira, 4099-002 Porto ([mapa](#))

15 Outubro 2018

**Carlos A. R. Herdeiro**

(Physics Dept. U. Aveiro and IST-Lisbon)

Global Coordinator:

“Fundamental Fields and Compact Objects”, FunFiCO 777740-H2020-MSCA-RISE-2017



Horizon2020 RISE (Research and Innovation Staff Exchange)

is about **secondments** (missions).

And using them to stimulate synergies and networking  
to produce high quality research  
(industry, society).

# Marie Curie **RISE** Actions within Horizon2020 (**R**esearch and **I**nnovation **S**taff **E**xchange)

4 years project (Dec 2017 - Nov 2021)  
Fundamental Fields and Compact Objects (FunFiCO)

Partners (at kick off meeting, December 20th 2017, Aveiro, Portugal):



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UFPA (Brazil)

To apply one should ask:

- 1) Do I have an international team,  
**in particular including young researchers (ESRs),**  
of both beneficiaries and partners ?
- 2) Do I have an excellent and timely scientific project ?

Our story:

**1) The team**

Our participation in:

Horizon2020 RISE (Research and Innovation Staff Exchange)

was partly promoted by our earlier

(FP7) IRSES (International Research Staff Exchange Scheme) project

Global Coordinator:

“Fundamental Fields and Compact Objects”, FunFiCO 777740-H2020-MSCA-RISE-2017  
(Aveiro, Sheffield-UK, Valencia-Spain // Belém-Brazil and UNAM-Mexico)

Global Coordinator:

“Numerical Relativity and High Energy Physics”, NRHEP 295189-FP7-PEOPLE-IRSES-2011  
(Aveiro, Barcelona-Spain, IST-Lisbon, Rome-Italy // Belém-Brazil and Mississippi-USA)

# Action overview

NRHEP-295189-FP7-PEOPLE-2011-IRSES

## Lifetime:

1/1/2012 - 31/12/2015

## Science Focus:

Theoretical gravitation and high energy physics

## Nodes and People:

Coordinators: see poster!  
23 members (14 ER, 9 ESR)

## Webpage:

<http://gravitation.web.ua.pt/index.php?q=node/87>

**1st  $NR_{hEP}$**

**Numerical Relativity and High Energy Physics**

**Network Meeting**  
9-13 July 2012, Aveiro University

Network Coordinators:  
Emanuele Berti (Mississippi/USA)  
Vitor Cardoso (Lisbon/Portugal)  
Luis Carlos Crispino (Pará/Brazil)  
Leonardo Gualtieri (Rome/Italy)  
Carlos Herdeiro (Aveiro/Portugal)  
Ulrich Sperhake (Barcelona/Spain)

For more information visit:  
<http://gravitation.web.ua.pt/NRHEP>

Support by:  
**7** PEOPLE  
MARIE CURIE ACTIONS

# First global meeting: workshop



Aveiro, Portugal, 9-13 July 2012

# Science: meetings



First network global meeting: 9–13 July 2012, Aveiro University, Portugal



Satellite workshop: "Amazonian workshop on black holes and analogue models of gravity", 7–9 August 2012, Universidade Federal do Pará, Belém do Pará, Brazil



Second network global meeting: "NRHEP2: Spring School", 11–14 March 2013, IST Lisbon, Portugal



Satellite workshop: " II Amazonian workshop on black holes and analogue models of gravity", 5–7 June 2013, Universidade Federal do Pará, Belém do Pará, Brazil



Third network global meeting, integrated in the workshop "Testing General Relativity with Astrophysical observations", 6–10 January 2014, University of Mississippi (Ole Miss), USA



Satellite workshop: " III Amazonian workshop on black holes and analogue models of gravity", 4–8 August 2014, Universidade Federal do Pará, Belém do Pará, Brazil

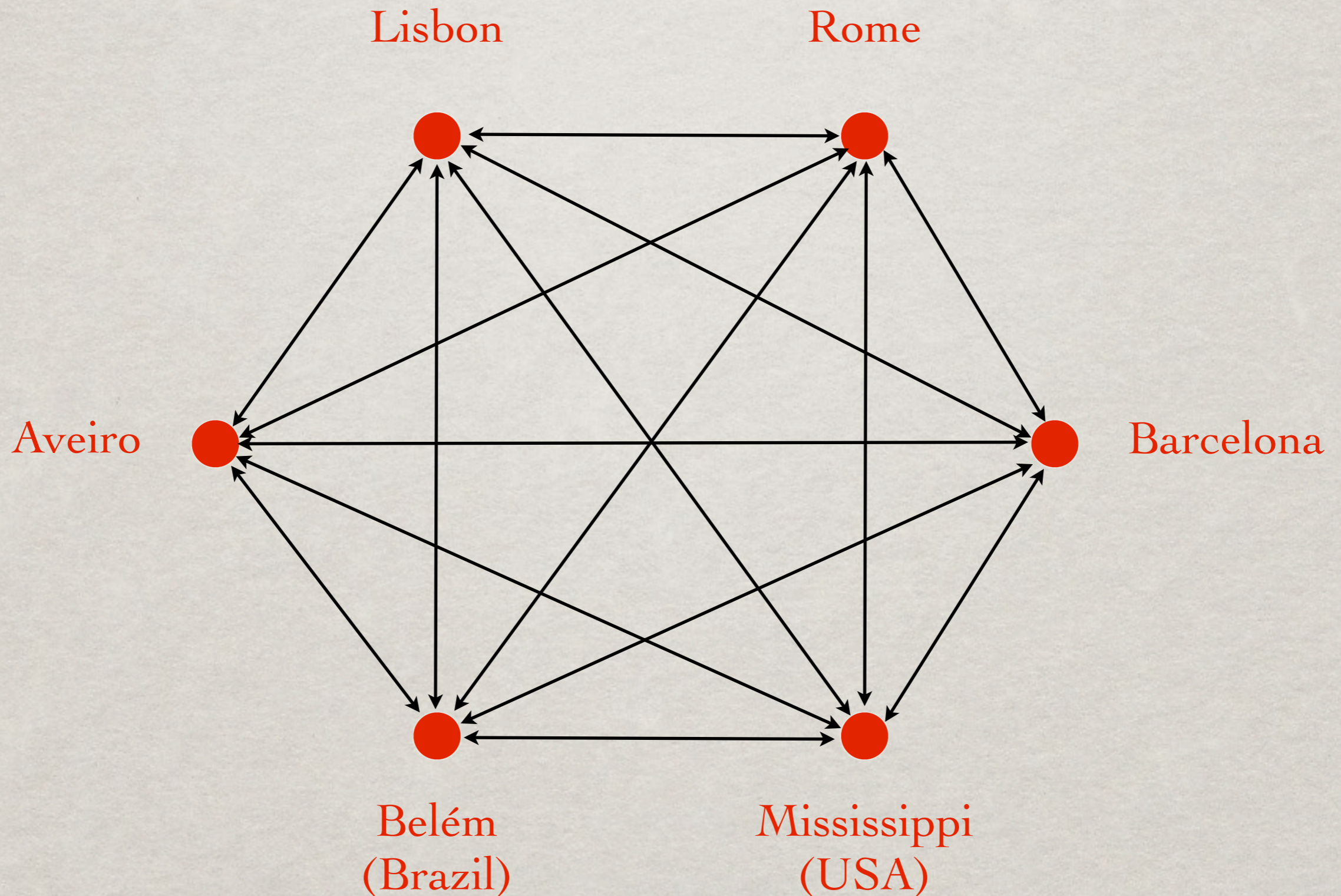
**Good practice!**

Combine a few secondments with organising a  
conference/school/workshop.

Very successful IRSES project:

- 1) Over 95 % of the budget spent;
- 2) Over 100 science papers published  
acknowledging this network;

# Scientific publications: true networking



Arrow denote common publications

A new team emerges:

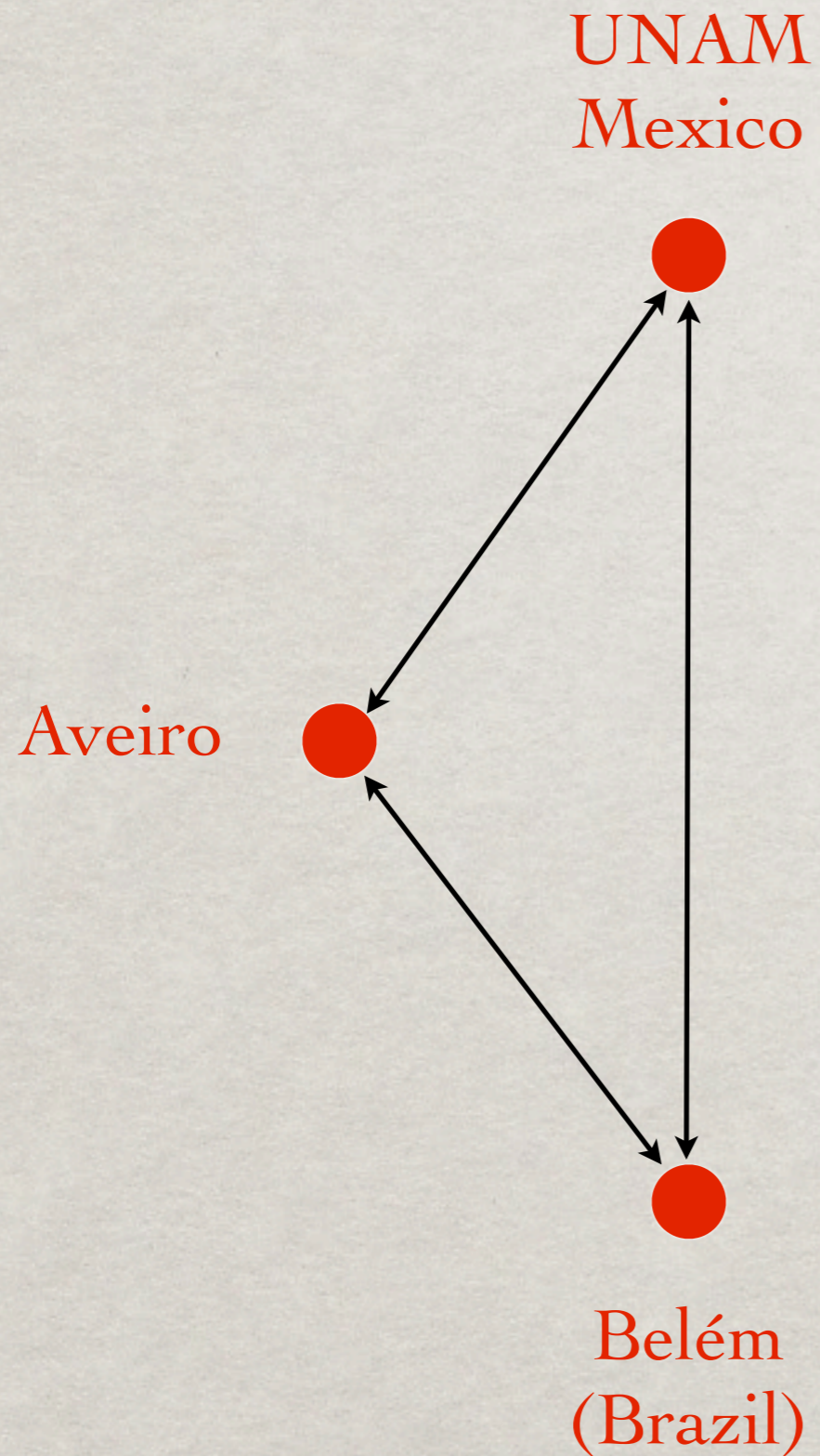
Aveiro



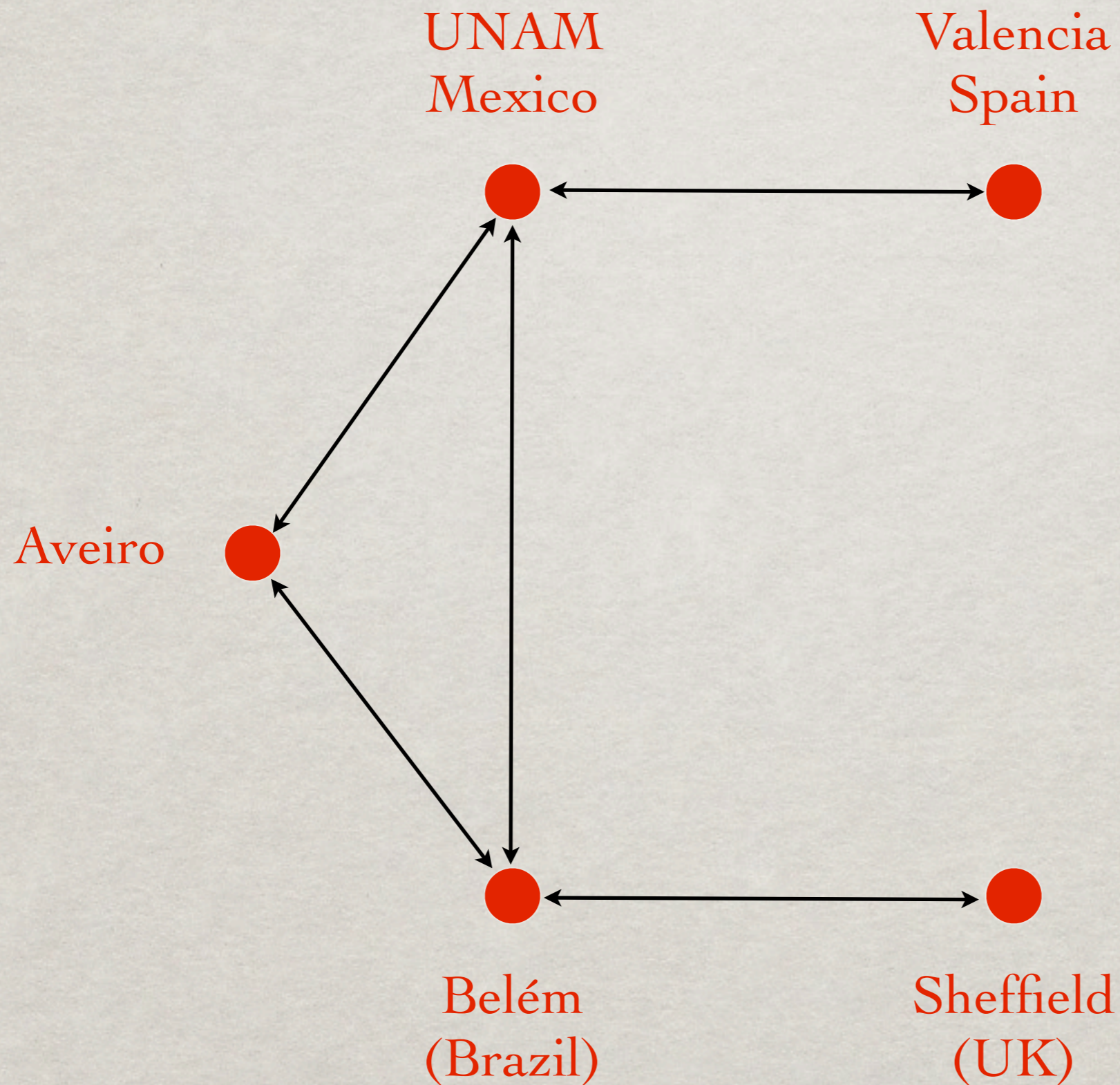
Belém  
(Brazil)



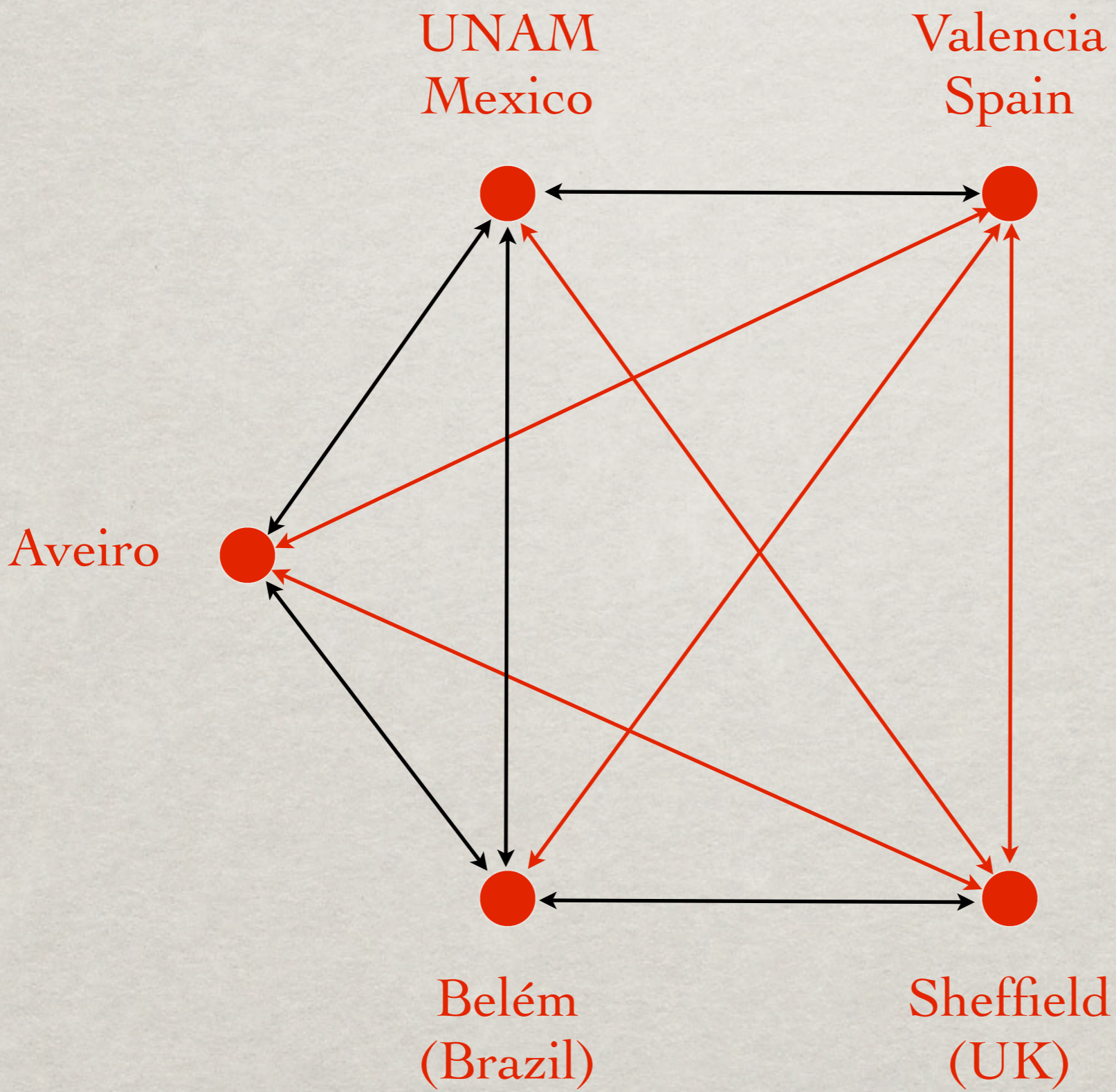
A new team emerges:



# A new team emerges:



A new team emerges, with both existing **and potential new synergies**



Take home lesson 1 - the team:

- 1) Better chance if **both** existing and new connections;
- 2) There is a crucial involvement of young researchers (especially PhD students but also young post-docs);

Secondment from Aveiro to UNAM  
April-May 2018  
(combined with 1 day FunFiCO meeting)



Our story:

**1) The project**

Our field of research is “Strong Gravity”:

in particular  
physics, astrophysics and mathematics  
of  
**black holes and other ultracompact objects**

A unique opportunity!

A different type of headlines (Fev 12th 2016)!



## Eurogrupo força Portugal a preparar plano B com mais austeridade

O Governo vai elaborar novas medidas de redução do défice, que estejam prontas a usar "quando necessário". Mercados estão a penalizar a dívida pública portuguesa **Economia, 20/21**



**"Os exames não aumentaram as retenções", diz Crato**

É a primeira vez que o ex-ministro da Educação fala depois de sair do Governo e recusa-se a criticar o seu sucessor **p12**

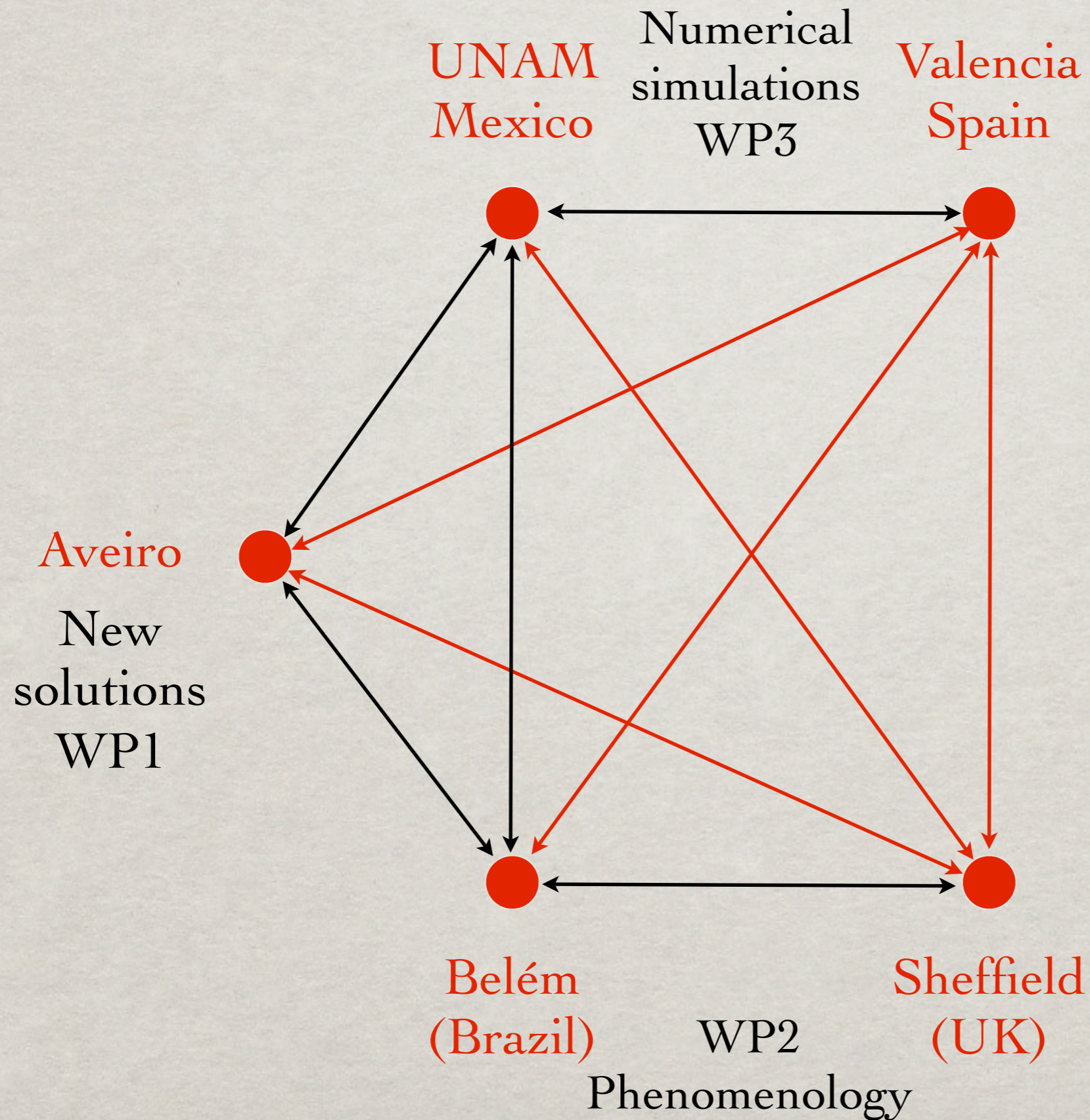
**Rússia dita agora as suas condições na guerra da Síria**

Com as forças leais a Assad a fecharem o cerco a Aleppo, EUA acusam Moscovo de querer adiar trégua **p24**

This strongly supported our case  
of a project to study the true nature of compact objects  
and its impact on fundamental physics.

Moreover the team has complementing expertise  
for this project:

# Complementing expertise:



As always in applications...

you have to be fortunate the evaluators rate you sufficiently  
high!

In the 2016 call we were slightly below the funding threshold.

So we tried again in 2017 and got it!

## Take home lesson 2 - the project:

- 1) There should be clear complementing expertise;
- 2) The timing must be right to produce the desired impact;
- 3) You must convince the world this is really important, even if that is obvious to you;
- 4) Be persistent! You may not get it the first time.

The project is well underway!

In 10 months:

- over 25 publications within the project;
- 7 secondments completed (48 planned in 4 years);

# Declaration of secondments

## How much?



### Unit costs per researcher per month

For secondments eligible for funding

Marie Skłodowska-Curie Action	Category A Staff member unit cost * <i>person/month</i> Top-up allowance	Category B Institutional unit cost * <i>person/month</i>	
		B1 Research, training and networking costs	B2 Management and indirect costs
Research and Innovation Staff Exchange	<b>2.000</b>	<b>1.800</b>	<b>700</b>

\*These unit costs are subject to a funding rate of 100% and **no country coefficients** apply.

RISE in three words:

b**ri**ng collaborations clos**er**

Thank you for your attention!



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## From Annex I to the Grant Agreement (Description of the Action) Part B

1<sup>st</sup>) Kick off meeting, closed to network participants, Aveiro, 2 days, March 2018.

**Agenda:** assessment of all work packages, establish priority list of tasks, concrete collaborative plans for tackling them and update the activities plan for this project.

2<sup>nd</sup>) Workshop, open to the community, UNAM, Mexico, 4 days, March 2019.

**Agenda:** workshop devoted to non-Kerr COs phenomenology, both GWs and electromagnetic, covering WP2 and 3. Keynote speakers from both in and outside the network will participate. As output we plan to stimulate the write up of collaborative review paper.

3<sup>rd</sup>) School, open to the community, Valencia, 4 days, September 2020.

**Agenda:** a numerical relativity oriented school for evolving BHs and other COs in the presence of matter, covering WP3. We plan to have a set of mini-lectures. The written up lectures will be published as a special volume of a well known international journal.

4<sup>th</sup>) Workshop, open to the community, Sheffield, 4 days, July 2021.

**Agenda:** construction and physical properties of non-Kerr COs, covering WP1. It will be timely to reassess the most promising such models, and their construction, involving numerical techniques. We plan to make public the deliverable D1.2 at this point.

5<sup>th</sup>) Workshop, open to the community, Belém, 4 days, August 2022. The closing network meeting. It will include review talks by the node coordinators covering the work in all work packages. We plan to write proceedings, as an action memory.

# Planned secondments for 2018



European Commission

Research & Innovation - Participant Portal

Proposal Submission Forms

Proposal ID 777740

Acronym FunFiCO

## 3 - Budget

Table A3.1 – List of secondments

Staff Member		Sending Organisation				Seconded to Organisation				Work Package Number	Secondment Starting Month	Duration of Secondment (Researcher-Months)
ID	Profile	Short Name	Country	Region	Academic Sector	Short Name	Country	Region	Academic Sector			
1	ER	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	2	3	1
3	ESR	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	2	3	2
2	ER	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	1	8	1
1	ER	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	3	15	1
4	ER	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	2	15	1
5	ER	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	2	15	1
6	ESR	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	2	15	1
1	ER	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	1	20	1
7	ESR	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	1	31	1
1	ER	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	32	1
8	ESR	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	32	1

3 secondments, 4 months planned



Proposal ID 777740

Acronym FunFiCO

Staff Member		Sending Organisation				Seconded to Organisation				Work Package Number	Secondment Starting Month	Duration of Secondment (Researcher-Months)
ID	Profile	Short Name	Country	Region	Academic Sector	Short Name	Country	Region	Academic Sector			
5	ER	UAVR	PT	EU/AC	yes	UNAM	MX	TC	yes	2	43	1
1	ER	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	3	44	1
3	ESR	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	3	44	1
7	ESR	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	3	44	1
8	ESR	UAVR	PT	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	3	44	1
11	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	9	1
14	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	3	1
10	ER	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	1	2	1
12	ESR	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	1	2	1
13	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	2	4	1
11	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	15	1
14	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	15	1
9	ER	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	15	1

5 secondments, 5 months planned



Proposal ID 777740

Acronym FunFICO

10	ER	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	14	1
12	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	2	14	1
13	ESR	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	14	1
10	ER	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	1	26	1
12	ESR	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	1	26	1
13	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	28	1
9	ER	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	45	1
14	ESR	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	44	1
10	ER	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	38	1
12	ESR	UVEG	ES	EU/AC	yes	UNAM	MX	TC	yes	3	40	1
13	ESR	UVEG	ES	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	38	1
15	ER	USFD	UK	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	1	1
19	ESR	USFD	UK	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	2	1	1
17	ESR	USFD	UK	EU/AC	yes	UNAM	MX	TC	yes	3	1	1
17	ESR	USFD	UK	EU/AC	yes	Universidade Federal do Pará	BR	TC	yes	3	8	1

4 secondments, 4 months planned