

# Proposal Submission Form

European Research Council



**EUROPEAN COMMISSION**  
7th Framework Programme on  
Research, Technological  
Development and Demonstration

**A1:**  
**Summary**

Proposal Number

000000

Proposal Acronym

ATLASMUCOMMTRIGPHYS

## General Information

Type of project

Starting Grant

Call identifier

ERC-2007-StG

Type of project

ERC Starting Grant

Proposal Title

Strategies for the Commissioning of the Muon Spectrometer of the ATLAS experiment with LHC data

Duration in months

48

ERC Review Panel  
(1st preference)

PE2: Fundamental constituents of matter: H...

ERC Review Panel  
(2nd preference)

None

ERC Review Panel  
(3rd preference)

None

ERC Keyword 1

PE2\_1: High energy physics

ERC Keyword 2

PE2\_2: Fundamental interactions and particles

ERC Keyword 3

PE2\_3: Particle physics

ERC Keyword 4

None

Free Keywords

ATLAS Muon Spectrometer Commissioning

Abstract (max. 2000 char.)

The ATLAS experiment at the LHC pp collider has a wide potential for discovery of new physics and for precise measurements of known processes. Since final states with muons are of great interest a highly performant Muon Spectrometer has been designed and is under assembly.

The achievement of the design performance of the muon trigger and reconstruction system depends not only on the spatial resolution of carefully calibrated detectors, but also on the constant monitoring of run time dependent conditions: chamber relative alignment and distortions, inner tracker to the muon spectrometer overall alignment. Furthermore, the ATLAS Muon Trigger has to cope with high background from meson decays in flight, at low transverse momentum, and high rate of uncorrelated background hits at high luminosity. As a consequence, the muon High Level Trigger algorithms deserve a long term optimization and tuning with physics data, depending on the run conditions.

Therefore, we propose to address the following items: deploy software tools for detector description that can provide a run-time correction of realistic effects for the use of offline and online muon identification algorithms; introduce realism in the simulation of the Muon Spectrometer as much as the comparison with data will require; add flexibility to the implementation of the HLT muon selection, in order to ensure efficiency and robustness;

## INFORMATION ON THE PRINCIPAL INVESTIGATOR

Family Name	Monittola		
Birth Family Name	Spagnolo		
First Name(s)	Stefania		
Title	Dr.	Gender	Female
Nationality	Italy	Country of residence	Italy
Date of birth	30/09/1969	Country of Birth	Italy
Town of Birth	Veglie, Lecce		
Contact address			

Current Organisation name (if applicable)	INFN and Universita` del Salento		
Current Department/Faculty/Institute/ Laboratory name (if applicable)	Sezione INFN di Lecce and Dipartimento di Fisica, universita` del Salento		
Street Name	c/o ex Collegio Fiorini, Dipartimento di Fisica, INFN Lecce, via Arnesano	Number	-
Town	Lecce	Postal Code/Cedex	I-73100
Country	Italy	Phone 1	+39 0832 297458
Phone 2	-	Fax	+39 0832 325128
E-mail	stefania.spagnolo@le.infn.it		
E-mail 2	stefania.spagnolo@cern.ch		

Eligibility	
Date of first PhD or Doctorate award (DD/MM/YYYY)	10/06/1998
If this date is more than 9 years prior to the call deadline: do you request an extension of the eligibility period (of maximum 3 years)?	no
Documentary evidence will be required at a later stage.	
During the last calendar year, have you submitted any other proposal for an ERC grant?	no

## INFORMATION ON THE ADMINISTRATIVE OFFICIAL OF THE HOST ORGANIZATION

Person in charge of administrative, legal and financial aspects in the host organization			
Family name	Gentile	First name(s)	Carla
Title	Mrs.	Sex	Female
Position in the organisation	Senion administrative officer		
Contact Address			
Department/Faculty/Institute/Laboratory name/...	Sezione di Lecce dell'Istituto Nazionale di Fisica Nucleare		

Street name	via Arnesano, c/o Ex Collegio Fiorini, INFN LECCE	Number	-
Town	Lecce	Postal Code/Cedex	I-73100
Country	Italy	Phone 1	+39-0832-297490
Phone 2	+39-0832-297492	Fax	+39-0832-325128
E-mail	carla.gentile@le.infn.it		
E-mail 2	-		