

AXEL ORGOGOZO
123, impasse de la fruitière
01170 Crozet, FRANCE

January 21, 2013

Prof. Gustavo C. Branco and Dr. Margarida N. Rebelo
Centro de Fisica Teorica de Particulas
Instituto Superior Tecnico
Av. Rovisco Pais, P-1049-001 Lisboa, Portugal

Dear Prof. Branco and Dr. Rebelo ,

I am writing in response to the advertisement on Inspire concerning the postdoctoral position in Theoretical Physics. I will receive my Ph.D. in Theoretical Physics, done under the supervision of Prof. Slava Rychkov, from the "Pierre et Marie Curie" University (Paris, France) in September 2013.

My area of expertise is the study of Electroweak Precision Tests in strongly coupled scenarios of Electroweak Symmetry Breaking, like Composite Higgs models, Technicolor or five dimensional models. More precisely, my research focuses on the influence of the UV tail of the strong sector to the Electroweak Precision Observables, in particular, how spin-1 resonances may allow to cure their apparent bad UV behavior. The main achievement of my research is the proof of a UV finite dispersive relation for the S Peskin-Takeuchi parameter in Composite Higgs models.

My current research plan aims at getting a similar understanding for the T parameter. I then wish to study the constraints from Electroweak Precision Tests in some simple models and assess the implications for the direct detection of resonances coming from the strong sector.

I have a wide range of interests in High energy physics and I would like later on to broaden my research scope. One of the fields that attracts me is Flavor Physics. It is a strong constraint on BSM physics and especially on strongly coupled scenarios of Electroweak symmetry breaking and I would like to learn more about it. That is why collaborating with you and your team motivates me. Also, the works of other members of your institute catch my attention. In particular those dealing with flavor structures in warped models. I would as well be glad to work on Dark Matter and Baryogenesis which are two fields I recently began to be interested in. The CFTP seems to be a good place to learn more about this too.

You will find enclosed, my Curriculum Vitae, Publication list and Research Statement. Three letters of recommendation will be sent to you by email by Prof. Slava Rychkov, Prof. Gino Isidori and Prof. Adam Falkowski. If any additional information is needed, please contact me.

I am looking forward to hearing from you. Thank you for your consideration.

Yours sincerely,

Axel Orgogozo

Enclosures

Curriculum Vitae

Personal Informations

Name : Axel Orgogozo

Date of birth : December, the 4th 1986 (Bayonne, France)

Citizenship : French

Affiliation : CERN theory division

Address : PH-TH, Case C01600, CERN, CH-1211 Geneva 23

E-mail Address : axel.orgogozo@lpt.ens.fr

Office phone : +41 22 76 72 138

Mobile Phone : +33 6 78 87 40 48

Education

2010–2013 : Ph.D. in Theoretical Physics at University Pierre et Marie Curie (Paris, France) under the supervision of Slava Rychkov- expected date : September 2013. Two years at LPTENS (Paris, France), one year at CERN (Geneva, Switzerland)

2009–2010 : Master 2 in Theoretical Physics at Ecole Normale Supérieure (Paris, France) *mention bien*

2008–2009 : Master 1 in Physics at Paris XI University (Orsay, France) *mention très bien*

2007–2008 : License in Physics at Paris XI University (Orsay, France) *mention très bien*

2004–2007 : Classe Préparatoire aux Grandes Ecoles (preparation to competitive exams in physics/mathematics) at Lycée René Cassin (Bayonne, France)

2004 : High School Diploma (Bayonne, France).

Workshops and Schools

- **Parma International School of Theoretical Physics, Parma, Italy** : "New trends in Cosmology, Particle Physics and Gauge-Gravity Duality", August 2010
- **Higgs Hunting 2011, Orsay, France** : July 2011
- **Les Houches Summer school, Les Houches, France** : "Theoretical physics to face the challenge of LHC", August 2011
- **Winter school at ICTP, Trieste, Italy** : "Strongly Coupled Physics Beyond the Standard Model", January 2012
- **Higgs Hunting 2012, Orsay, France** : talk given, July 2012
- **International School Cargese 2012, Cargese, France** : "Across the TeV frontier with the LHC", August 2012

Talks

- **LPT Orsay, Orsay, France** : "Higgsless models of strong Electroweak Symmetry Breaking and Electroweak Precision tests", January 2012
- **Edinburgh University, Edinburgh, UK** : "Strong Electroweak Symmetry Breaking versus Electroweak Precision Tests", May 2012
- **Higgs Hunting 2012 Orsay, France** : "Electroweak precision data and strong Electroweak Symmetry Breaking", July 2012

Past Internships

- **2010** : 6 weeks in experimental physics in Laboratoire Kastler Brossel (Evry, France) under the supervision of Laurent Hilico and Jean-Philippe Karr . Subject : "High resolution spectroscopy of H_2^+ "
- **2009** : 3 months in Lattice QCD in Bielefeld University (Germany) under the supervision of Edwin Laermann. Subject : "Chiral phase transition in Lattice QCD"
- **2008** : 2 months of introduction to Quantum field Theory in LPT Orsay (France) under the supervision of Jean-Christophe Wallet

Teaching Activity

- **2011-2012** : 2 semesters of oral preparation to competitive exams in mathematics for students from Classe Préparatoires aux Grandes Ecoles

Publication List

Axel Orgogozo

[1] A. Orgogozo and S. Rychkov, *Exploring T and S parameters in Vector Meson Dominance Models of Strong Electroweak Symmetry*, JHEP 1203 (2012) 046, arXiv :1111.3534 [hep-ph].

[2] A. Orgogozo and S. Rychkov, *The S parameter for a Light Composite Higgs: a Dispersion Relation Approach*, arXiv:1211.5543 [hep-ph].