

# Final PTB Report

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## Most recent published papers

Year	TITLE	Reference
2015-07-06	Discovery of tau Neutrino Appearance in the CNGS Neutrino Beam with the OPERA Experiment	Phys. Rev. Lett. 115, 121802
2015-03-15	Limits on muon-neutrino to tau-neutrino oscillations induced by a sterile neutrino state obtained by OPERA at the CNGS beam	JHEP 06 (2015) 069
2016-07-25	Determination of the muon charge sign with the dipolar spectrometers of the OPERA experiment	J INST 11 (2016) P07022

# Papers in the pipeline

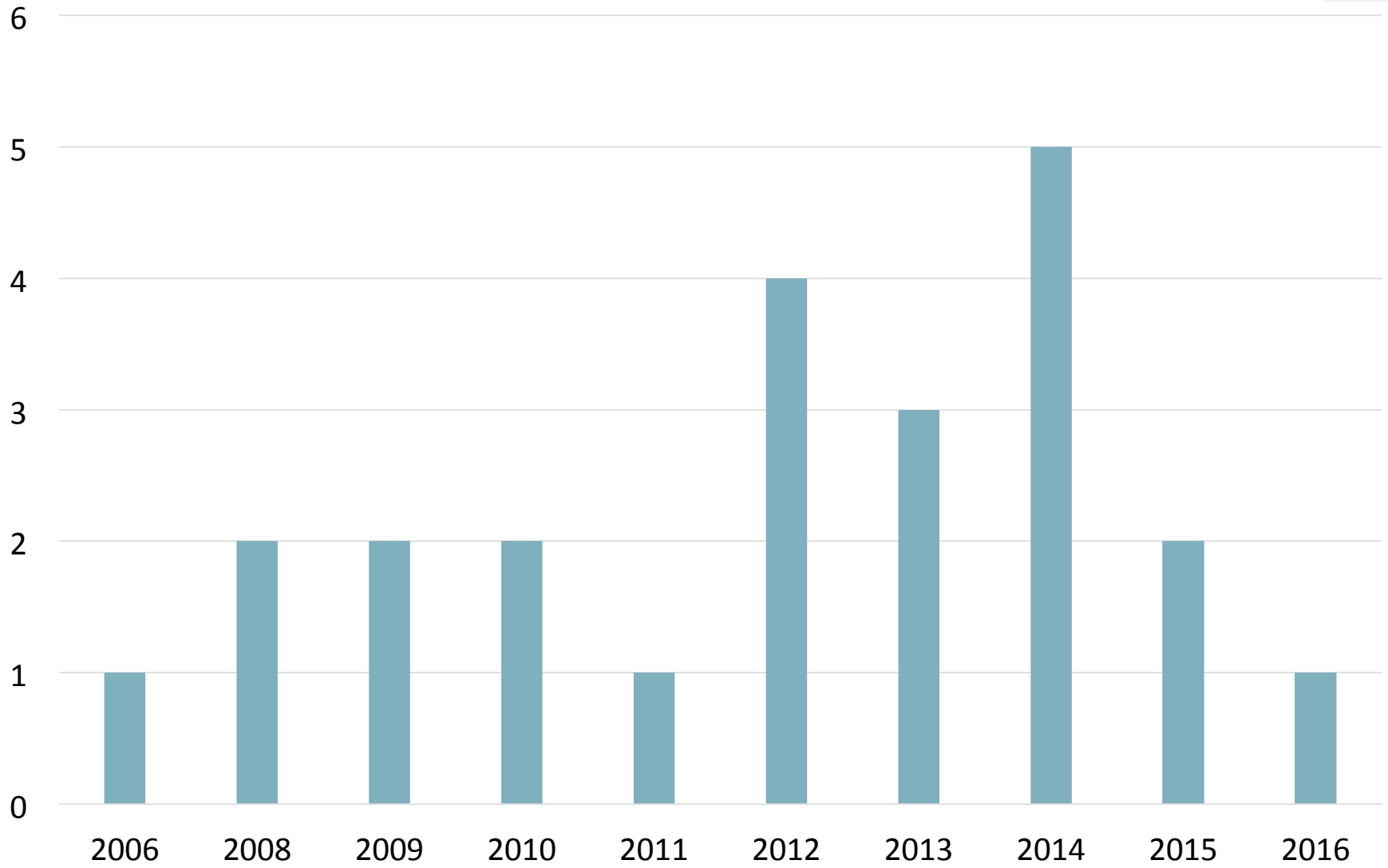
Papers	Editors	Status	Notes
Event with 2-decay topology	M. Roda, C. Sirignano G. Sirri	~ to be circulated	Int. Refs: A. Paoloni + S. Mikado, PTB Contact : H Pessard Proposed Journal: JHEP
Charged Particle Multiplicity Distribution	C. Kamiscioglu, A. Murat	~ to be circulated	Int. Refs: S. Ogawa, G. Wilquet PTB Contact : K. Kodama
nu <sub>e</sub> analysis status and prospect	M Tenti, S. Vasina (Zemskova)	draft in preparation	Int. Referees: A. Ariga, P. Vilain PTB Contact : L Patrizii
Cosmic $\mu$ annual modulation	A. Longhin, N. Mauri, A. Paoloni,	Finalizing the analysis	
Multivariate analysis with marginal events	A. Di Crescenzo, G. Galati	Finalizing the analysis	.
<i>possibly others</i>	.... ....	.... ....	...
Global Oscillation Analysis	G. Galati, B. Klicek, M. Tenti, S. Vasina	in progress	OPERA Legacy paper

# Published OPERA PAPERS

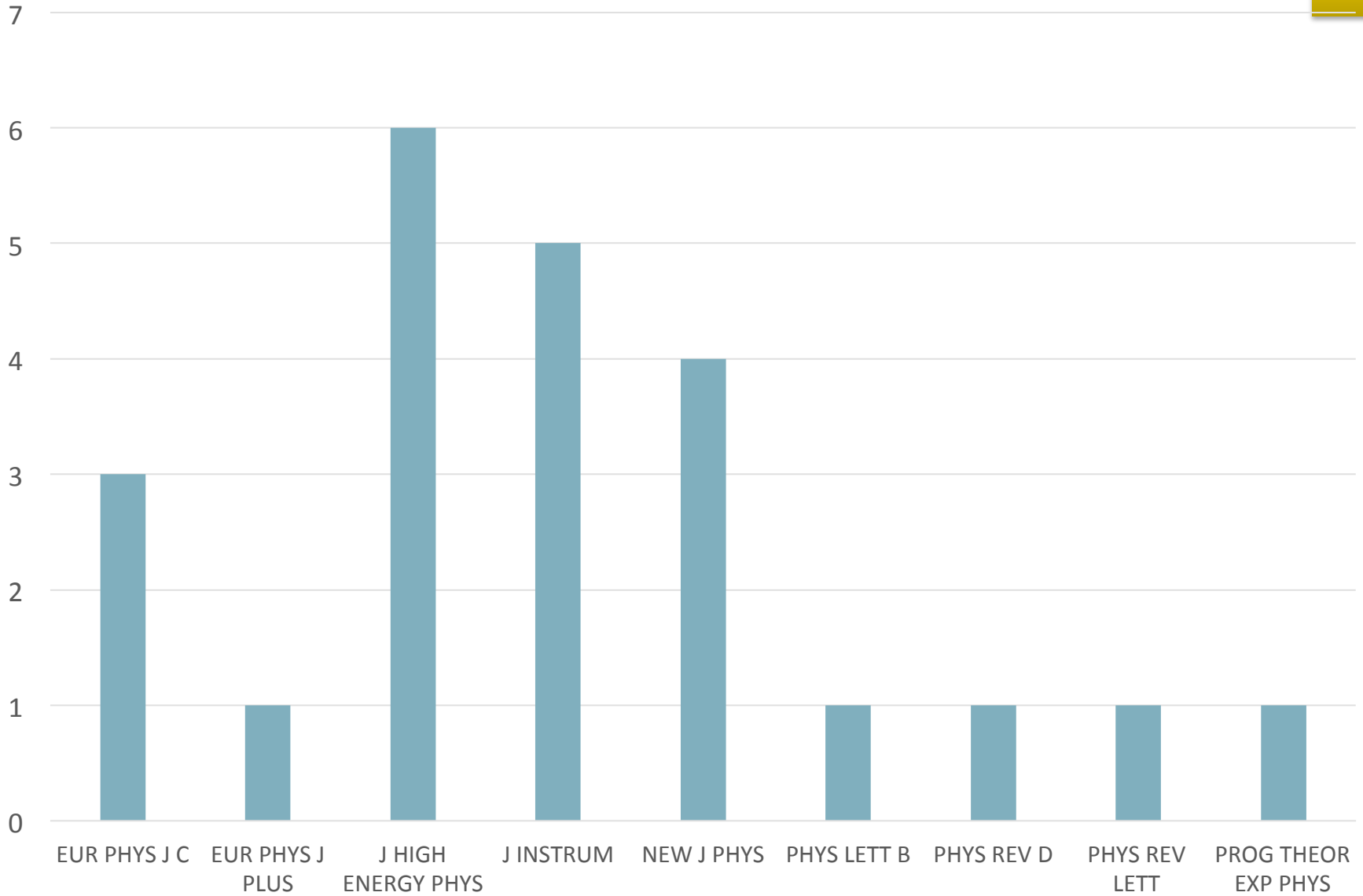


TITLE	JOURNAL	YEAR
First events from the CNGS neutrino beam detected in the OPERA experiment	NEW J PHYS	2006
Emulsion sheet doublets as interface trackers for the OPERA experiment	J INSTRUM	2008
Study of the effects induced by lead on the emulsion films of the OPERA experiment	J INSTRUM	2008
The OPERA experiment in the CERN to Gran Sasso neutrino beam	J INSTRUM	2009
The detection of neutrino interactions in the emulsion/lead target of the OPERA experiment	J INSTRUM	2009
Measurement of the atmospheric muon charge ratio with the OPERA detector	EUR PHYS J C	2010
Observation of a first $\nu(\tau)$ candidate event in the OPERA experiment in the CNGS beam	PHYS LETT B	2010
Study of neutrino interactions with the electronic detectors of the OPERA experiment	NEW J PHYS	2011
Momentum measurement by the multiple Coulomb scattering method in the OPERA lead-emulsion target	NEW J PHYS	2012
Search for $\nu(\mu) \rightarrow \nu(\tau)$ oscillation with the OPERA experiment in the CNGS beam	NEW J PHYS	2012
Determination of a time-shift in the OPERA set-up using high-energy horizontal muons in the LVD and OPERA detectors	EUR PHYS J PLUS	2012
Measurement of the neutrino velocity with the OPERA detector in the CNGS beam	J HIGH ENERGY PHYS	2012
Measurement of the neutrino velocity with the OPERA detector in the CNGS beam using the 2012 dedicated data	J HIGH ENERGY PHYS	2013
Search for $\nu(\mu) \rightarrow \nu(e)$ oscillations with the OPERA experiment in the CNGS beam	J HIGH ENERGY PHYS	2013
New results on $\nu(\mu) \rightarrow \nu(\tau)$ appearance with the OPERA experiment in the CNGS beam	J HIGH ENERGY PHYS	2013
Evidence for $\nu(\mu) \rightarrow \nu(\tau)$ appearance in the CNGS neutrino beam with the OPERA experiment	PHYS REV D	2014
new results on $\nu(\mu) \rightarrow \nu(\tau)$ appearance with the OPERA experiment in the CNGS beam	J HIGH ENERGY PHYS	2014
Measurement of the TeV atmospheric muon charge ratio with the complete OPERA data set	EUR PHYS J C	2014
Procedure for short-lived particle detection in the OPERA experiment and its application to charm decays	EUR PHYS J C	2014
Observation of tau neutrino appearance in the CNGS beam with the OPERA experiment	PROG THEOR EXP PHYS	2014
Discovery of tau Neutrino Appearance in the CNGS Neutrino Beam with the OPERA Experiment	PHYS REV LETT	2015
Limits on muon-neutrino to tau-neutrino oscillations induced by a sterile neutrino state obtained by OPERA at the CNGS beam	J HIGH ENERGY PHYS	2015
Determination of the muon charge ratio with the dipolar spectrometers of the OPERA experiment	J INSTRUM	2016

# YEARLY PRODUCTION



# JOURNALS



Conference 2105	Location	Date	Speaker	Affiliation	Subject	Proceedings
WAPP2015	Darjeeling, India	16/12/15	L. Patrizzii	INFN Bologna	The OPERA Experiment	
ICNFP 2015	Crete, Greece	27/08/15	O. Sato→N. Mauri	INFN Bologna	Results from the OPERA experiment at the CNGS beam	
ICNFP 2015	Crete, Greece	26/08/15	N. Mauri	INFN Bologna	Search for sterile neutrino mixing in the n	
Lomonosov-2015	Moscow, Russia	24/08/15	S.Zemskova	JINR, Dubna	Search for $\nu_{\mu}$ to $\nu_{e}$ in the OPERA experiment	
Lomonosov-2015	Moscow, Russia	24/08/15	M.Tenti	INFN Bologna	Search for sterile neutrino mixing in the $\nu_{\mu}$ to $\nu_{\tau}$ appearance channel with the OPERA detector	
Lomonosov-2015	Moscow, Russia	24/08/15	T. Ariga	LHEP, Bern University	New results from the OPERA experiment	
NUFACT 2015	Rio de Janeiro	10/08/15	C. Sirignano	Padova University and INFN	Recent results from the OPERA experiment	
APS-DPF 2015	AnnArbor,USA	04/08/15	T. Hayakawa	Nagoya	New results from the OPERA experiment	
EPS 2015	Vienna, Austria	22/07/15	L.Stanco	INFN Padova	Search for sterile neutrinos at Long-BL	
EPS 2015	Vienna, Austria	22/07/15	G.Sirri	INFN Bologna	Results from the OPERA experiment in the CNGS beam	
PPC2015	Deadwood, USA	29/06/15	F. Pupilli	LNF INFN	Recent Results from the OPERA experiment	
NDM2015	Jivaskyla, Finland	01/06/15	M. Roda	Padova University and INFN	Results from the OPERA experiment in the CNGS beam	
FLASY2015	Colima, Mexico	01/06/15	K. Ishiguro	Nagoya University	Recent Results from the OPERA experiment	
CIPANP 2015	Vail, CO, USA	20/05/15	G. Galati	Napoli University	OPERA neutrino oscillation search: Status and perspectives	
Neutel 2015	Venice, Italy	03/03/15	A. Paoloni	LNF INFN	Latest results from the OPERA experiment	
Neutel 2015	Venice, Italy	03/03/15	M. Roda	Padova University and INFN	(poster) double decay event	
Neutel 2015	Venice, Italy	03/03/15	B. Hosseini	INFN Naples	(poster) Energy Measurement of Electromagnetic Showers	
Neutel 2015	Venice, Italy	03/03/15	M. Tenti	INFN Bologna	(poster) Search for sterile neutrino mixing in the $\nu_{\mu}$ to $\nu_{\tau}$	
La Thuile 2015	Aosta, Italy	01/03/15	Y. Gornushkin	JINR, Dubna	OPERA neutrino oscillation search: status and perspectives	
LLWI 2015	LakeLousie,Canada	21/02/15	A. Ariga	LHEP, Bern University	Results from the OPERA experiment	
PPP2015	Valday, Russia	01/02/15	S. Zemskova	JINR, Dubna	$\nu_{\mu}$ to $\nu_{e}$ oscillation search in the OPERA experiment	

Conference	Location	Date	Speaker	Affiliation	Subject
..... ICNFP 2017	Crete	August 2017	tba (>1 talk)		General, +...
Lomonosov 2017	Moscow	August 2017	tba (>1 talk)		General +...
ICRC2017	Korea	12/07/17	tba		Annual Modulation
Neutel 2017	Venice, Italy	13/03/17	M. Tenti	INFN Bologna	More Results from the OPERA Experiment
LaThuile2017	Aosta, Italy	06/03/17	G. Galati	INFN&Uni Naples	More Results from the OPERA Experiment
PIC 2016 13-17	Vietnam	13/09/16	D. Duchesneau	LAPP, Annecy	Results from the OPERA experiment in the CNGS beam
NOW 2016	Otranto, Italy	05/09/16	G. Galati	Napoli University	Neutrino oscillation search with the OPERA experiment
ICHEP2016	Chicago,USA	03/08/16	Y. Gornushkin	JINR, Dubna	(poster) More results from the OPERA experiment
NUFACT 2016	Quy Nhon, Vietnam	23/08/16	A. Paoloni	INFN Frascati	Results from the OPERA experiment in the CNGS beam
ICNFP 2016	Creta, Greece	13/07/16	A. Di Crescenzo	Napoli University & INFN Padova University &	Results from the OPERA experiment A neutrino interaction with two secondary vertices
ICNFP 2016	Creta, Greece	13/07/16	C. Sirignano	INFN	
NEUTRINO 2016	London, England	04/07/16	D. Duchesneau	LAPP, Annecy	Latest results from the OPERA experiment
Moriond EW 2016	La Thuile, Italy	14/03/16	A. Pastore	Bari University and INFN	Results from OPERA Discovery of Nu_tau Appearance and
LaThuile2016	Aosta, Italy	07/03/16	T. Fukuda	Toho University	Recent Results from OPERA
LLWI2016	Lake Louise (Canada)	07/02/16	A. Longhin	INFN Padova	Latest results from OPERA

**Reminder to Team Leaders (\*) : Please, provide your ranked Speaker List for 2017**

**(\*) not having done it yet**



# Acknowledgments

We thank the speakers for the quality of their Slides and Talks  
and for their patience with our (sometimes) delayed replies

A special thank to Yuri for helping with the OPERA website update

We thank the Spokesman for providing several talk opportunities  
and advises

We thank the Physics Coordinator for supporting the PTB, also in slides  
reviewing

**We thank our brilliant young people for doing most of the job leading to the  
OPERA papers and their excellent talks at Conferences**