LNF Scientific Committee Meeting 9/05/2019

Theory at LNF

- Present situation (IS, composition, budget)
- Recent happenings relevant for TH@LNF
- Contributions and connections with EXP@LNF
- TH@LNF strengthening strategies (local)
- TH@LNF strengthening strategies (management)

Enrico Nardi

Anagrafica 2019

	Nome	Gen.	Posizione	Qualifica	DOT4	ENP	GSS	NEMESYS	QFT_HEP	TASP	PRIN-SIMMI	CSN I	CSN II	CSN III	CSN V	P.S.	CCR	Servizi	Tot.	Note
1	Babusci Danilo	M	Dipendente	Primo Ricercatore				30				50	20						100	
2	Bellucci Stefano	M	Dipendente	Primo Ricercatore				100											100	
3	Benfatto Maurizio	M	Dipendente	Primo Ricercatore				50						50					100	
4	Corcella Gennaro	M	Dipendente	Ricercatore		100													100	
5	Del Duca Vittorio	M	Dipendente	Primo Ricercatore		0													0	Attualmente in congedo, fino ad Aprile 2020
6	Ghoshal Anish	M	Associato	Dottorando						100									100	Studente Dottorato RM3. Associato dal 1/1/2017
7	Gionti Gabriele	M	Associato	Ricercatore straniero	100														100	Dipendente altro ente (Specola Vaticana). IS: FLAG-BO
8	Nardi Enrico	M	Dipendente	Primo Ricercatore						100									100	
9	Cataldo Antonino	M	Assegn./Bors.	Borsa Ente Pubblico				0											0	scadenza contratto 31/5/2019
10	Giacchino Federica	F	Assegn./Bors.	Assegnista						50									50	Assegno di ricerca dal 15-10-2018
11	Pancheri Giulia	F	Associato	Ass.Senior															0	Ass. Senior emerito
12	Bistarelli Silvia	F	*Inserire manualmente la qualifica !*					0											0	
13	Bjorkeroth Fredrik	M	Borse post doc stranieri							100									100	Borsista INFN a partire dal 2/10/2017
14	Pruna Giovanni Marco	M	*Inserire manualmente la qualifica !*		100														100	Assegnista LNF-RM3, afferente per il 2019 alla IS WSIP di RM3
				FTE Totali		2	1		1.8		3.5									Totale: 8.3 FTE

ENP LNF	Exploring New Physics	1.0 FTE
NEMESYS LNF	Non equilibrium dynamics models and excited state properties of low-dimensional systems	1.8 FTE
TAsP LNF	Theoretical Astroparticle Physics	3.5 FTE
Dot Gr4:		2.0 FTE
Total:		8.3 FTE

Budget

(not including special contributions for conferences/workshops)

	Missioni	*Indiviso*	*Total*	*Spec. Contrib.*
2019 (K€)	4.0+2.0	21.5+2.5	**30.0**	10.0
2018 (K€)	4.0+3.0	22.5+3.5	**33.0**	10.0
2017 (K€)	3.5+3.5	24.5+3.5	**35.0**	9.0

- Budget not rich, but if handled carefully it is sufficient
- Some "sufference" (signaled more than once in CSN4) for Missioni
- Special contributions are a relevant part of the budget
- Budget handling: equal subdivision among staffs with FTE $\geqq$ 50%

Years 2014/15: budget 72.5K€ for up to 26.5 FTE (30% Engeneers/Chemists, 25% FIS-03)
CSN4 requested more coherence in associations and a scaling down of the budget.

- April 2015 V. Del Duca: *Leave of the absence to ETH, Zurich* (until April 2020)
- June 2016 G. Isidori: *Resigned for Zurich U.* (already on leave since 2011)
- October 2018 M.P. Lombardo: *Transferred to INFN-FI*

Sample of Scientific Activities

Seminars & 1h.+ Talks (30%-35% budget)

	2016	2017	2018
- Seminars	23	20	26
- Talks@Institutes	--	18	8
- Talks@Workshops	8	18	12
- Lessons@SSchool	15	--	15
Total:	39	56	61

(It wouldn't look bad for a mid-size group, and it is remarkable for a small-size group)

Recent happenings relevant for TH @ LNF

June 2013: Consulting group for theoretical physics at LNF was set up

A. Lerda (President CSN4), M. Mangano (CERN), A. Masiero (GE)

➔ Report with recommendations for the strengthening of the Group

(Workshops/Institutes to attract young researchers, strengthen relations with Rome U., activities coordinated with experimental colleagues, also for what concerns raising funds and resources)

All recommendations have been addressed and matched during the triennium 2015/18

November 2017: Report of the "Comitato Valutazione Internaz." to the INFN President

"We are concerned that the Theory Group at LNF is very small, and, we were told, lacks coherence. A strong theory group would contribute to the intellectual atmosphere at the laboratory, so addressing this issue will be increasingly important as the active experimentation in HEP decreases at LNF."

The Report contains **only one raccommendation for CSN4** (National level):

Recommendation: CSN4-1. *"In association with the Lab director, the INFN should plan for the success of the LNF theory group"*

14-15 May 2018: Report of the 55th MEETING of the LNF Scientific Committee :

A general concern for the scientific activities in the Lab is the continued decline in the number of theoretical physicists. The SC chair confirms that this should be an item of priority for the upcoming SC meeting, **with a possible strong statement to be made by the committee.**

Recent happenings relevant for TH @ LNF

29 May 2018: **Meeting in "Presidenza INFN" on the future of TH @ LNF**

A. Masiero, F. Zwirner (TH members in GE), **A. Lerda** (President CSN4)
L. Silvestrini, F. Morales, G. Degrassi (TH Coordinators RM1, RM2,RM3), **E. Nardi**

Three hypothesis put forth: 1. Act concretely to strengthen TH @ LNF; 2. "Non fare nulla"; 3. "Pursuing a more active policy to encourage aggregation and impact in theoretical groups of the Rome area reorganizing the theory in Frascati " [*read: close the group, transfers to RM*]

24 September 2018: **Discussion about TH @ LNF at the meeting of the GE**

[Invitated: P. Campana (LNF Director), A.Lerda (President CSN4)]

The LNF Director presented a Report prepared together with the TH Group which also included strong statements in support of the strengthening of TH@LNF from leading exprmnt. colleagues (Resp. LNF Research Division, Coordinators GR1/2/3, the spokespersons of PADME and KLASH)

"Finally, to cooperate with the TH Group efforts […] it is fundamental that the management will provide clear signals of interest in fostering and strengthening Theoretical Physics at LNF"

5-6 November 2018: **Report of the 56th MEETING of the LNF Scientific Committee :**

The SC would like to hear presentations (and possibly have in-depth discussions with the proponents) on the following projects/items at the next meeting:

1. **Theory at LNF**
   [7 items in total: Axion searches, DAPHNE-TF, PADME, SIDDARTHA, ELI-NP, LATINO]

Fundamental steps to overturn the closing hypothesis:

29 May 2018: Meeting on the future of TH@LNF (Masiero, Zwirner, Lerda, Coord RM1,2,3)

We have recalled the recommendations of CG-2013: (Masiero, Lerda, Mangano)

1. *Growth in activities […] like Summer Institutes, Workshops, Schools […]*
2. *Programs focused to attract at LNF colleagues of the Rome area.*
3. *Activities optimized and coordinated with experimental colleagues*

And we have stressed the following:

7 Rome Joint Workshops, 8 Summer/Winter/Spring/Autumn Institutes, 2 LNF Spring Schools, 3 n&n workshops, 2 Assegni cof. with RM U. Joint th-exp publications (PRL, PRD). Contribution to KLASH (axion-exp.) CDR. Support to ALPs@PADME. Organization of LNF General Seminars, Providing an ACE for ATLAS. Submitted a theory-experimental PRIN proposal (PADME oriented)

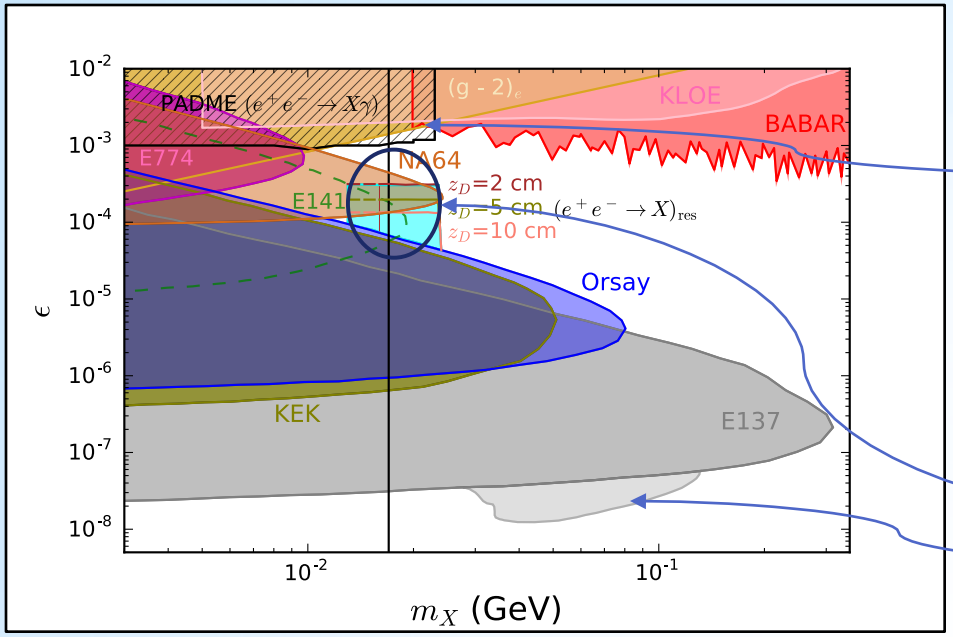
All the GC-2013 recommendations had been addressed and fully matched ! 😜

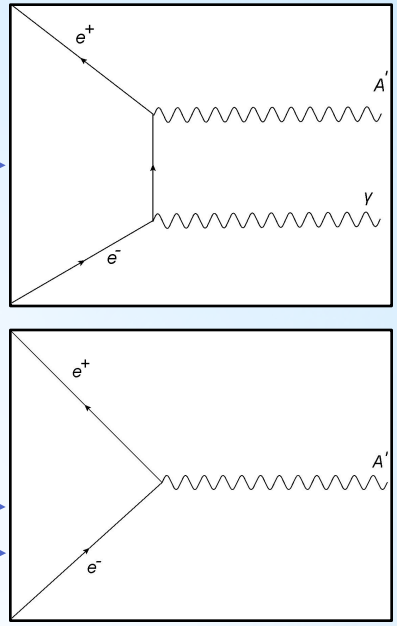
24 September 2018: LNF-Director at the discussion on TH@LNF at GE meeting

- Presented document on status, activities, impact of LNF-TH in the Labs.
- The strong statements of EXP@LNF colleagues 😘 had presumably an important impact
- As finally the strong support from the Director (**"condivido in toto l'analisi e lo sforzo notevole fatto" - "I fully agree with the analysis and with the remarkable efforts made"**)

Connections and contributions to EXP@LNF (examples)

(it is not an account of all TH@LNF activities !)





"Resonant production of DP in e+ beam dump experiments" **Phys.Rev. D97 (2018)**
With C.D.R. Carvajal (UdeA), A. Ghoshal (RM3), D. Meloni (RM3), M. Raggi (RM1)

PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE

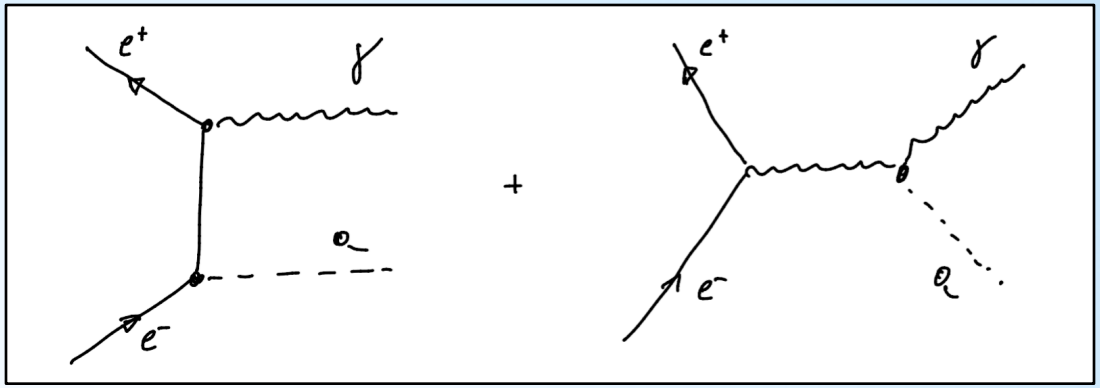
Exploring Hidden Sectors: a joint theoretical and experimental effort to fully exploit the potential of the Frascati Positron Annihilation into Dark Matter Experiment (PADME) for hidden sector particles searches

Collaborative TH-EXP effort: with M. Raggi (RM1) and A. Di Crescenzo (NA)

ALPs @ PADME

[with G. Corcella, L. Delle Rose (FI), F. Giacchino (LNF Gr1+4), M. Raggi (RM1)]

Study of pseudoscalar production in association with a single photon

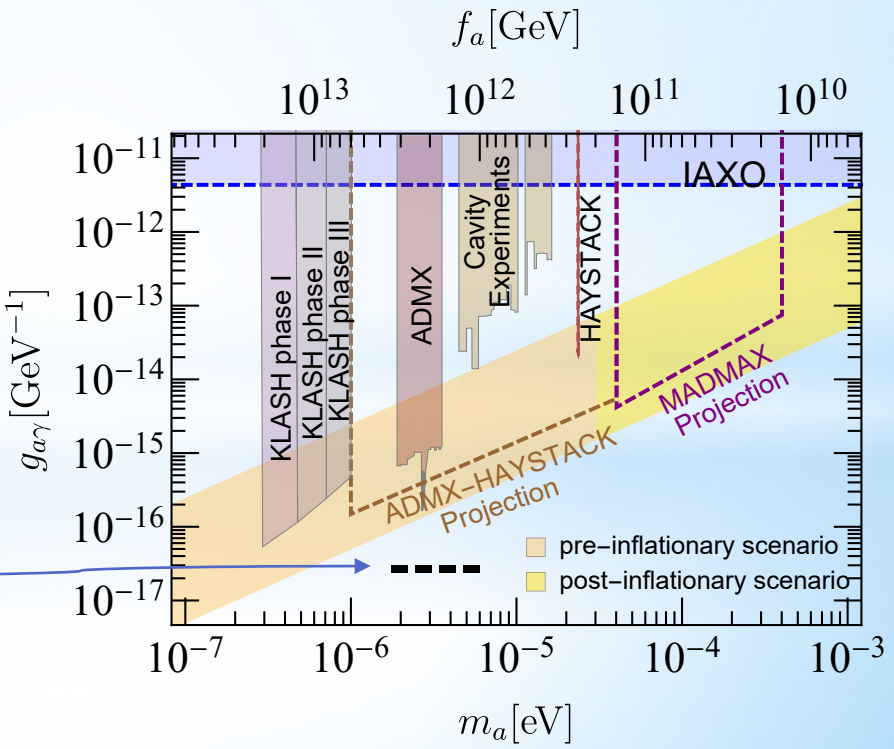


The KLASH Physics Case

(Contribution to the KLASH CDR)

[with F. Bjorkeroth (LNF), M. Giannotti (Barry U.), L. Visinelli (Uppsala U.)]

Canonical axion DM window



TH@LNF strengthening strategies (local):
Fixed term contracts

1. INFN Postdoctoral fellowships for non Italian citizens (theory)

One ongoing for TasP-LNF (F. Bjorkeroth).
For 2019 only 7 fellowships assigned to CSN4 (decreased from 14 because of FELLINI COFUND)
One has been ***again*** assigned to TAsP-LNF giving continuity to one TH-LNF postdoc position

2. "Assegni di ricerca" LNF

One ongoing EPN cofunded by RM3 (G.M.Pruna). Actively searching for other cofundings.

3. CABIBBO Fellowship (new and important)

Senior postdoc (Assegno): 3 years (2yr. @ LNF + 1yr. @ RM1,2 or 3). Call 2019, start 2020.
At regime: 2 TH-postdocs at LNF + 1 in the Rome area

4. FELLINI COFUND (2nd round, 15 fellowships)

Deadline July 16. TH-LNF is actively searching for high profile candidates

5. More speculative, but possible:

Postdoctoral position for TH support to the Consolidator ERC project INITIUM
(Innovative tecnology for directional DM detection. PI: E. Baracchini)

TH@LNF strengthening strategies (Management)

Permanent positions *The different modalities for hiring:*

1. National Public "Concorso" (with no pre-assigned workplace)
2. Direct call (Chiamata diretta, Art. 16 del D. Lgs. 218/2016)
3. "Concorso" reserved for protected categories (Legge 12 marzo 1999 no.68)
4. National Public "Concorso" (with pre-assigned workplace)
5. "Mobilità da Ente del comparto o da altra Amministrazione" (D.Lgs. 165/2001)
6. "Utilizzo delle graduatorie di concorso precedente"
7. Fixed term contracts turned into permanent (Stabilizzazioni, art. 36)
8. Trasfer to LNF from another INFN section

TH@LNF strengthening: the attempted roads:

1. National Public "Concorso" (with no pre-assigned workplace)

Constant interactions with several candidates with good chances of success in forthcoming competitions. Invitations, seminars, ongoing collaborations, to favor their familiarity with the LNF scientific environment.

2. Direct call (Art. 16 del D.Lgs. 218/2016)

Several attempts in the past in this direction (declined by the INFN managment). Presently, we are building contacts with 3/4 colleagues with permanent positions abroad that expressed some interest in a possible return in Italy.

3. Concorso riservato categorie protette (Legge 12 marzo 1999 no, 68)

The first road attempted (fall 2015). Excellent idea: basically a research position for free ! Our candidate eventually scored 4° in the regular concorso. Declined by the INFN managment. It was later voted and approved as a viable modality for hiring researchers: CD May 23rd, 2017

4. National Public "Concorso" ***with pre-assigned workplace***

From the Report at the GE meeting 24/09/2018: Suggestions to the management:

Hire an outstanding young researcher via a dedicated "concorso" with appropriate profile tuned to the LNF-TH needs. (Declined)

My personal opinion and conclusions:

In a phase in which the LNF activities in fundamental physics studies are facing a reconversion: new types of experiments are already ongoing or are being planned, innovative ideas are continuously discussed, and more than ever colleagues of experimental groups are seeking confrontation with theorists and inputs from them, strengthening TH@LNF should become a priority for INFN.

Besides the LNF Theory Group, leading colleagues of LNF experimental collaborations, the LNF Director, the INFN International Evaluation Committee (CVI) have already put forth strong statements in this direction. In the 55th meeting the SC has also expressed concern for the continuous weakening of TH@LNF, and has considered the possibility of formulating a strong statement. I think that the INFN management should take in due consideration the wide convergence of all these views.

Thank you for your attention

Gruppi Teorici in alcuni altri Laboratori:

DESY	18 staff/30 postdocs
FERMILAB	16/10
SLAC	9/10
KEK	24/33
LAP-TH	22/6