CSN4 and Theory Group in Bari

Xmas Theory Workshop 2024

CSN4: 6 scientific “lines”

1. Field and string theory
   a. NPQCD (Loc. Resp. G. Magnifico)
2. Phenomenology of elementary particles
   a. SPIF (Loc. Resp. F. De Fazio)
3. Nuclear physics
4. Mathematical methods
   a. QUANTUM (Loc./Nat. Resp. P. Facchi)
5. Astroparticle and cosmology
   a. TASP (Loc. Resp. E. Lisi)
6. Statistical physics and applications of field theory
   a. BIOPHYS (Loc. Resp. S. Stramaglia)
   b. FIELDTURB (Loc. Resp. G. Gonnella)

in Bari

https://www.ba.infn.it/TheoryGroup

NPQCD
Non-perturbative Quantum Chromodynamics

L. Cosmai

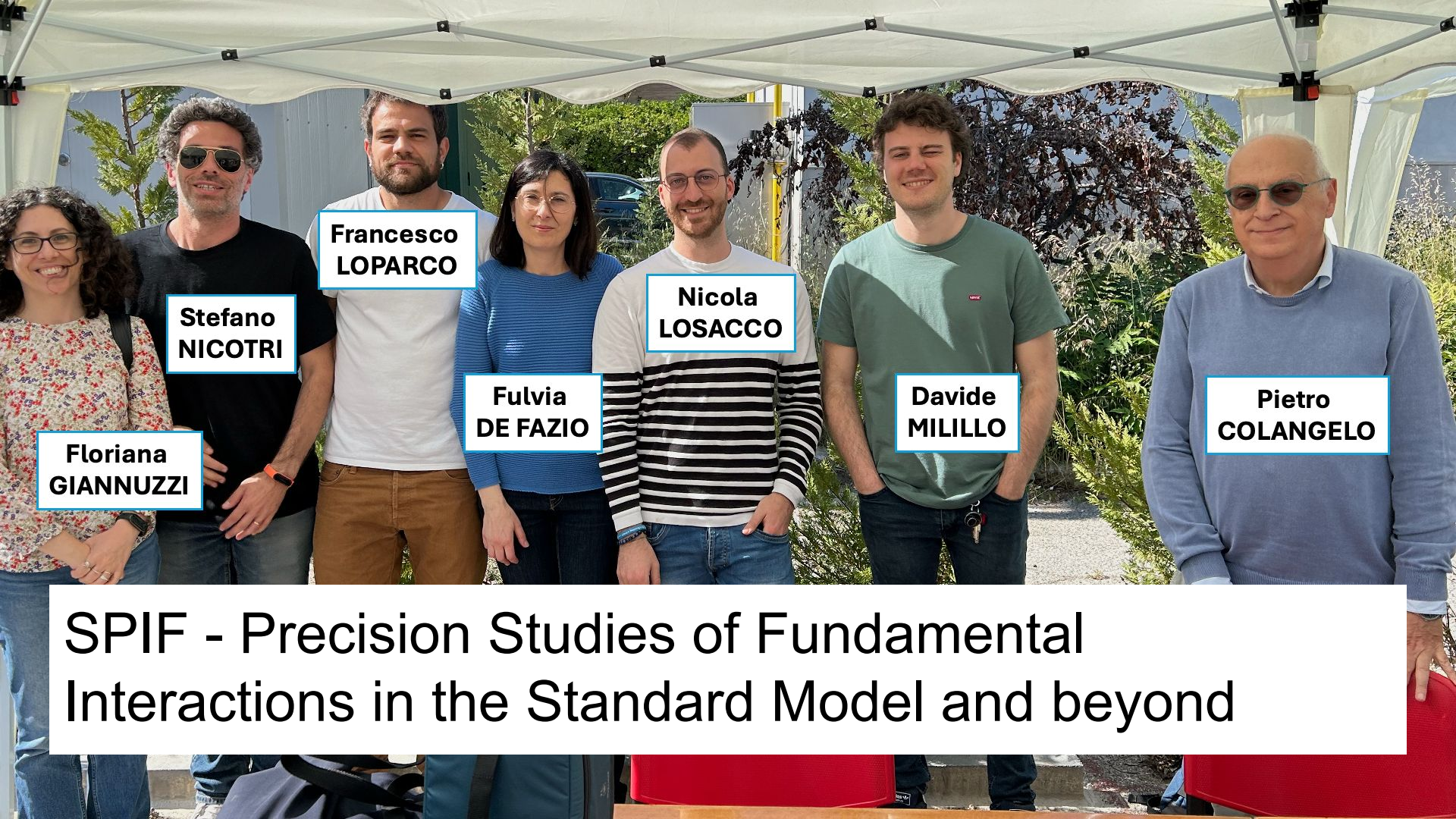
G. Magnifico

P. Cea

NPQCD
Non-perturbative Quantum Chromodynamics

Research items:

1. Quantum and quantum-inspired simulations Lattice Gauge Theories and their dynamics
2. Study of nonperturbative effects of QCD at nonzero temperature
3. Study of the QCD vacuum as a disordered chromomagnetic condensate



SPIF - Precision Studies of Fundamental Interactions in the Standard Model and beyond

SPIF
Precision Studies of Fundamental Interactions in the Standard Model and beyond

Research items:

1. Flavour Physics in the SM and in BSM scenarios
2. Holographic QCD
3. Flavour Physics & Hadron spectroscopy

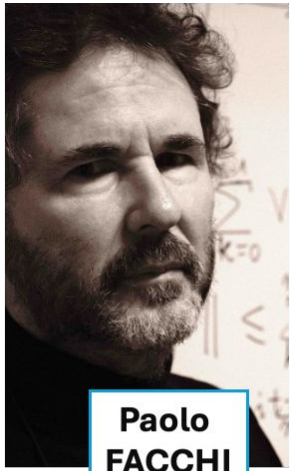
QUANTUM
Quantum Systems: entanglement, simulations, information


Giuseppe MAGNIFICO


Francesco PEPE


Saverio PASCAZIO


Giuseppe FLORIO


Paolo FACCHI


Cosmo LUPO

Fabio KUNDEN

QUANTUM
Quantum Systems: entanglement, simulations, information


Debmalya DAS


Maria MAFFEI


Giovanni GRAMEGNA


Giovanni SCALA


Riccardo ACQUAVIVA


Vito VIESTI


Viviana VIGGIANO

Giuseppe BUONO

Ammara AMMARA

Aaqib ALI


Daniele AMATO


Arturo KONDERAK

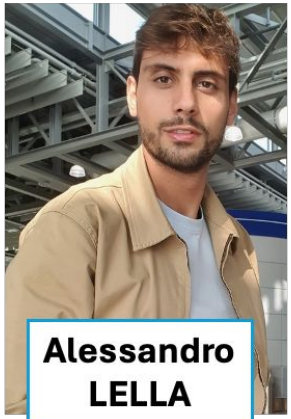
QUANTUM
Quantum Systems: entanglement, simulations, information

Research items:

1. Quantum simulation and quantum computing
2. Entanglement and quantum dynamics
3. Quantum Communications and Cryptography

TASP - Theoretical astroparticle physics


Maurizio GASPERINI

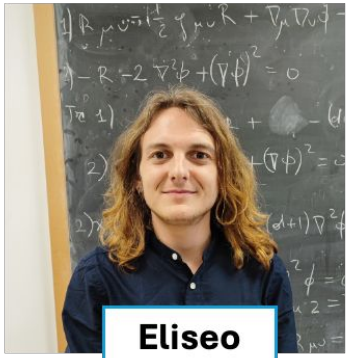

Alessandro LELLA


Eligio LISI


Antonio MARRONE


Alessandro MIRIZZI


Antonio PALAZZO


Eliseo PAVONE


Luigi TEDESCO

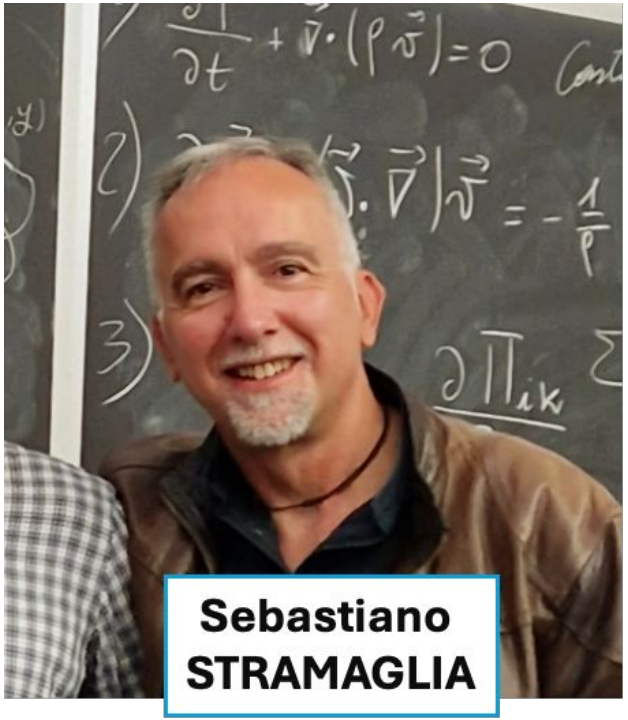
TASP - Theoretical astroparticle physics

Research items:

1. Neutrino physics [E. Lisi, A. Marrone, A. Palazzo]
2. Axions in astrophysics and other candidates for Dark Matter
   [A. Mirizzi, A. Lella, F. Lecce]
3. Cosmology [M. Gasperini, L. Tedesco, E. Pavone]

BIOPHYS

application of methods from theoretical physics to the analysis of data in complex systems



BIOPHYS
application of methods from theoretical physics to the analysis of data in complex systems

Research activity:

description of biological complex systems in term of higher order complex networks

FIELDTURB

Non-equilibrium statistical systems and fluids

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Non-equilibrium statistical systems and fluids

Research items:

1. Theoretical and analytical studies of non-equilibrium statistical mechanics models for self-propelled particles
2. Molecular dynamics simulations to study aggregation properties of self-propelled particles in 2D and 3D
3. Lattice Boltzmann simulations of Phase Field Theories of complex and active fluids

PEOPLE (AS OF 2024-07)

- Staff
- Senior
- RTDA
- Postdoc
- PhD

- Afferenza altre CSN

SPIF

Nome	Associazione	Percentuale di afferenza
De Fazio Fulvia	Dirigente di Ricerca	95%
Giannuzzi Floriana	Tecnologo	80%
Colangelo Pietro	Ass. Senior	100%
Loparco Francesco	Assegni INFN	100%
Losacco Nicola	PhD	100%
Nicotri Stefano	Tecnologo **CCR**	20%

TASP

Nome	Associazione	Percentuale di afferenza
Lisi Eligio	Dirigente di Ricerca	85%
Marrone Antonio	Prof. Ordinario	90%
Mirizzi Alessandro	Prof. Ordinario	100%
Palazzo Antonio	Prof. Associato	100%
Tedesco Luigi	Prof. Associato	100%
Gasperini Maurizio	Ass. Senior	100%
Lella Alessandro	PhD	100%
Pavone Eliseo	PhD	100%

FIELDTURB

Nome	Associazione	Percentuale di afferenza
Gonnella Giuseppe	Prof. Ordinario	100%
Suma Antonio	RTDB	100%
Negro Giuseppe	RTDA	20%
Carenza Lucio	Assegni non INFN	100%
Semeraro Massimiliano	Assegni non INFN	100%
Carollo Giovanni Battista	PhD	100%
Moretti Daniela	PhD	100%

BIOPHYS

Nome	Associazione	Percentuale di afferenza
Stramaglia Sebastiano	Prof. Ordinario	80%
La Rocca Marianna	RTDA	70%
Pomarico Domenico	Assegni non INFN	100%

NPQCD

Nome	Associazione	Percentuale di afferenza
Magnifico Giuseppe	RTDB	80%
Cea Paolo	Ass. Senior	100%
Cosmai Leonardo	Ass. Senior	75%

QUANTUM

Nome	Associazione	Percentuale di afferenza
Cunden Fabio	RTDB	100%
Facchi Paolo	Prof. Ordinario	100%
Florio Giuseppe	Prof. Ordinario	100%
Lupo Cosmo	Prof. Associato	40%
Magnifico Giuseppe	RTDB	20%
Pascazio Saverio	Prof. Ordinario	90%
Pepe Francesco	Prof. Associato	60%
Das Debmalya	RTDA	20%
Gramegna Giovanni	RTDA	20%
Maffei Maria	RTDA	20%
SCALA Giovanni	RTDA	70%
Amato Daniele	Assegni non INFN	100%
Maggi Rocco	Assegni non INFN	100%
Acquaviva Riccardo	PhD	100%
Ali Aaqib	PhD	100%
Ammara	PhD	100%
Buono Giuseppe	PhD	100%
Viesti Vito	PhD	100%
Viggiano Viviana	PhD	100%
D'Angelo Milena	Prof. Associato **CSN5**	10%