

Theory² @ CERN-TH

WL. TH Retreat 2016

The Group Staff

(Luis Alvarez-Gaumé)



Wolfgang Lerche



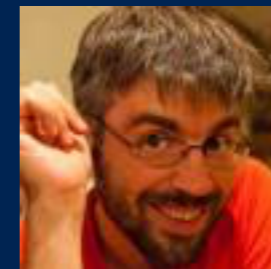
Kyriakos Papadodimas



Boris Pioline



Slava Rychkov



Amit Sever



Timo Weigand

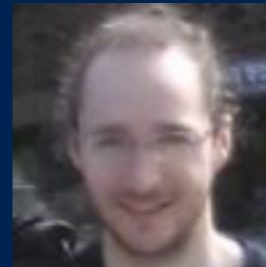


The Group Of Fellows

Dennis Klevers



Daniel Krefl



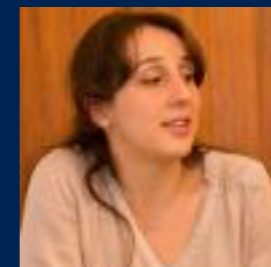
Ricardo Monteiro



Miguel Paulos



Marine Samsonyan



The Group

New Fellows

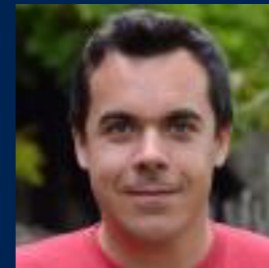
Benjamin Assel



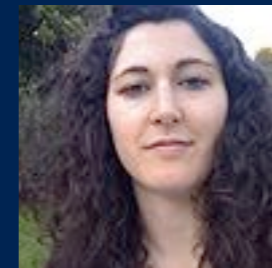
Cyril Closset



Andreas Stergiou



Alessandra Gnecchi
(Marie-Curie Fellow)



The Group

Visitors

Per Berglund



Petr Horava



Eliezer Rabinovici

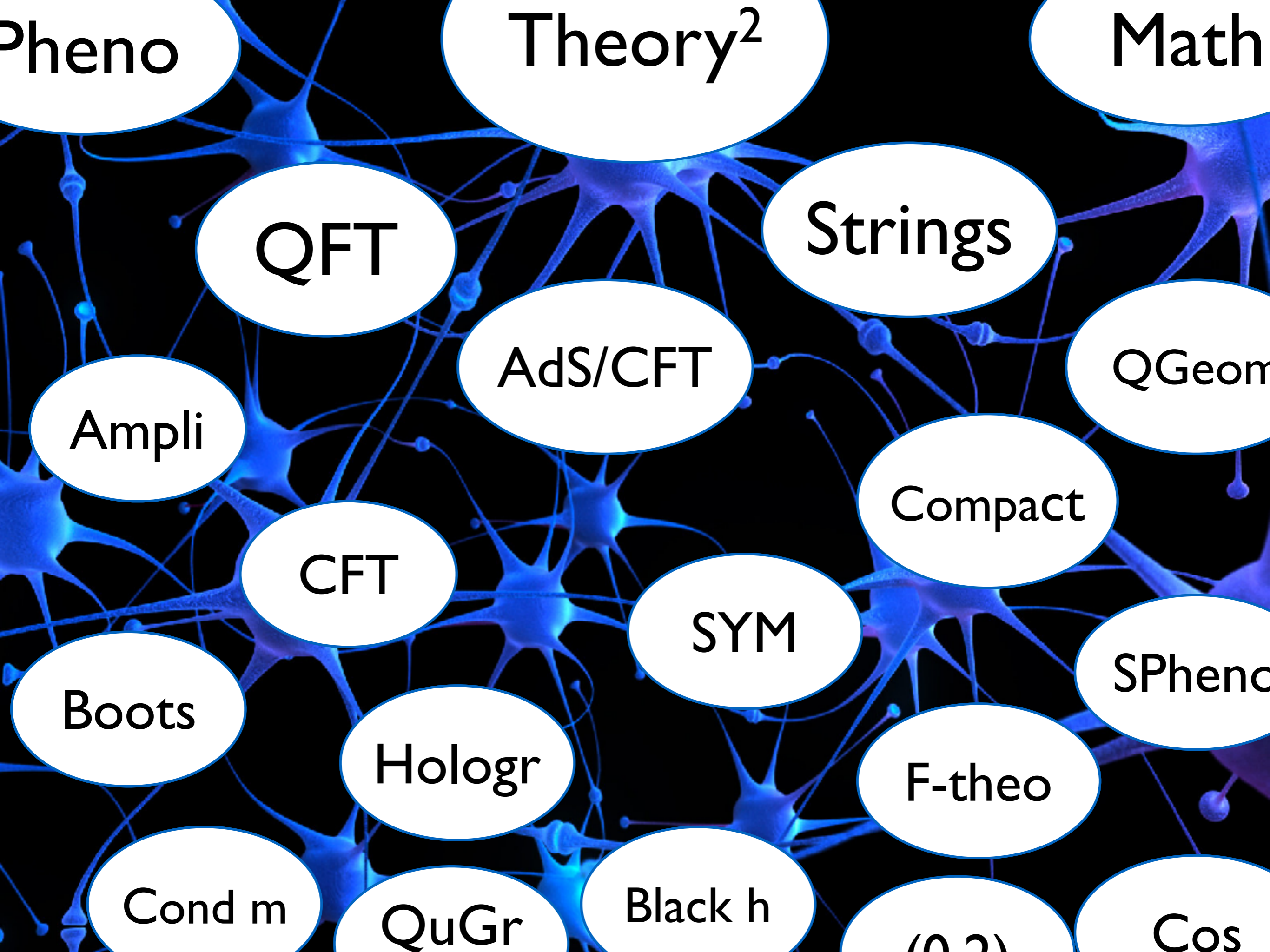


Emeri Sokatchev



Regular activities

- Seminar: 14:00 Tuesday formal theory/string/QFT
- Journal club: 14:00 Monday
- Winter School on Strings and Fields : 1st week of February
- TH Institutes



Pheno

Theory²

Math

QFT

Strings

AdS/CFT

Geom

Amp

CFT

SYN

SPheno

Boots

Hologr

neo

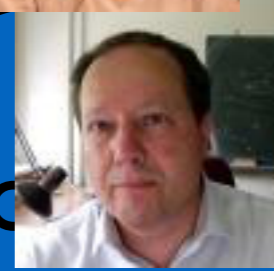
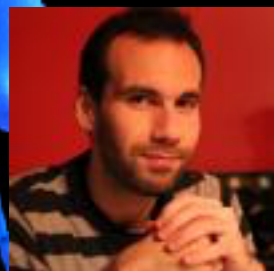
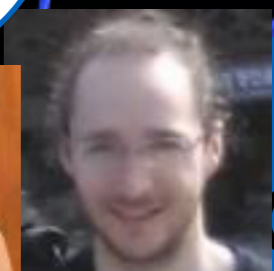
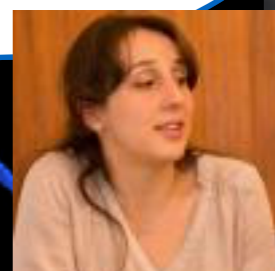
Cond m

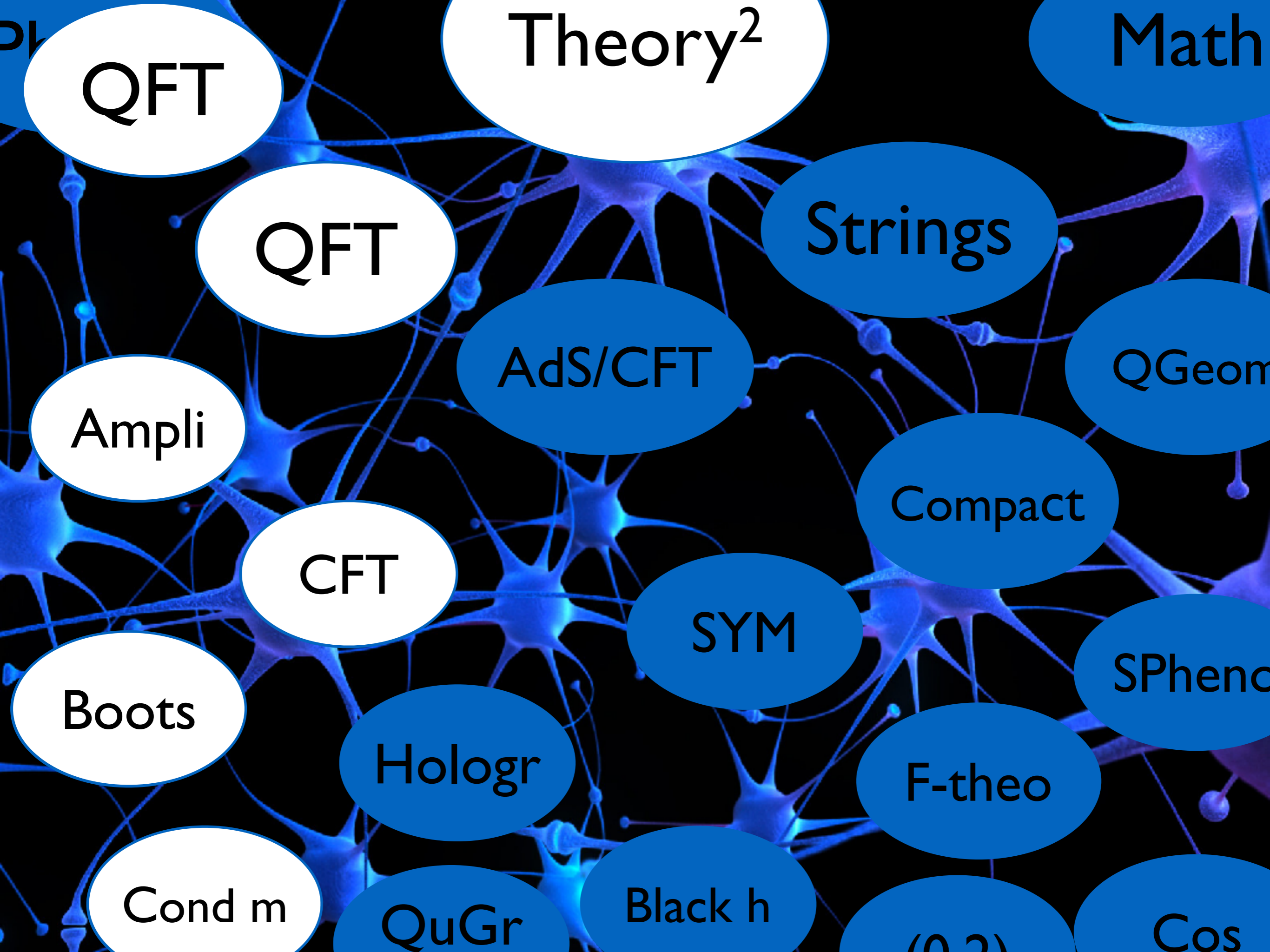
Gr

Black h

(0, 2)

Cos





QFT

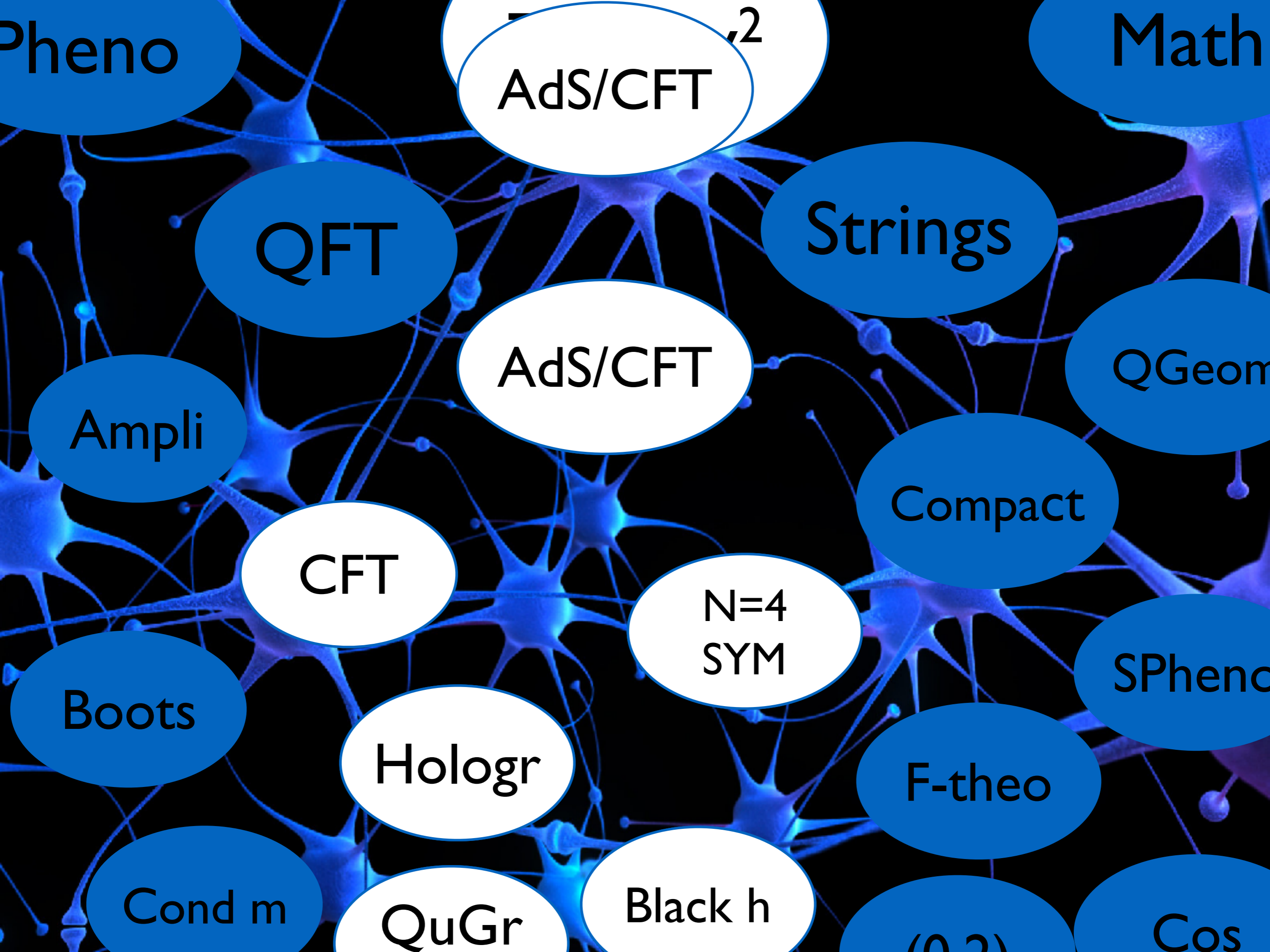
Hot Topics

- Amplitudes
- CFT in higher dim, bootstrap
- Localization techniques in SYM
- Cond matter: topol. insulators etc
- Resurgence



$$\sum_k \int_{12k}^{\phi_k} \int_{34k}^{\phi_k} - \sum_k \int_{1k}^{\phi_k} \int_{23k}^{\phi_k}$$

The diagram illustrates a relationship between two Feynman diagrams. The left diagram shows a central vertex labeled ϕ_k connected to four external lines labeled ϕ_1 , ϕ_2 , ϕ_3 , and ϕ_4 . The internal lines are labeled \int_{12k} and \int_{34k} . The right diagram shows a similar central vertex ϕ_k with the same external lines, but the internal lines are labeled \int_{1k} and \int_{23k} . A minus sign is placed between the two diagrams, indicating a subtraction of the right-hand side from the left-hand side.



Pheno

Math

AdS/CFT

QFT

Strings

AdS/CFT

QGeom

Ampli

Compact

CFT

N=4
SYM

SPheno

Boots

Hologr

F-theo

Cond m

QuGr

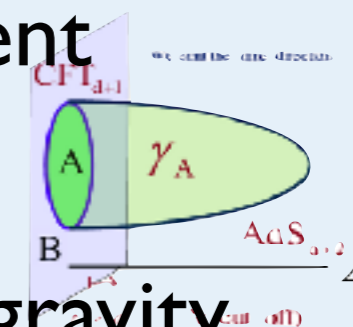
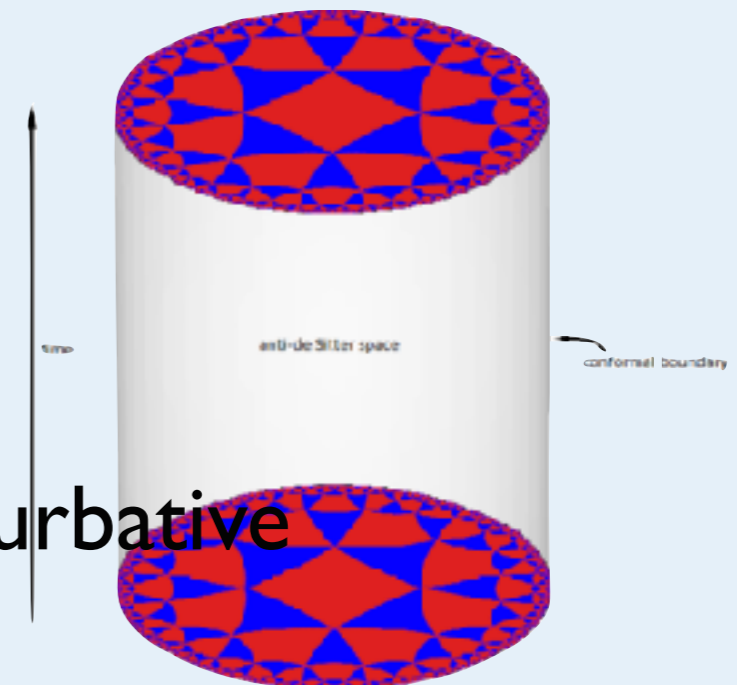
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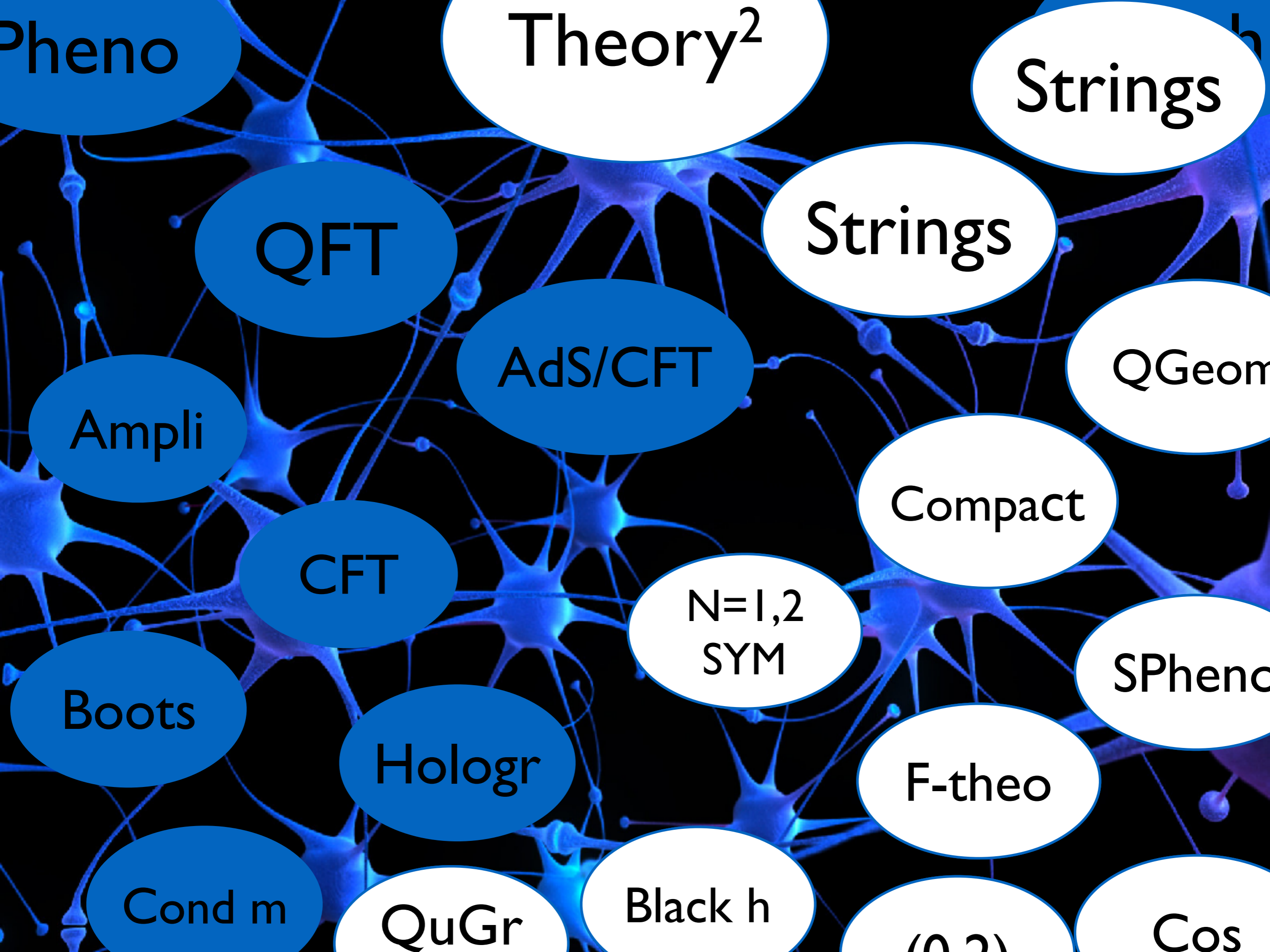
(0, 2)

Cos

AdS/CFT

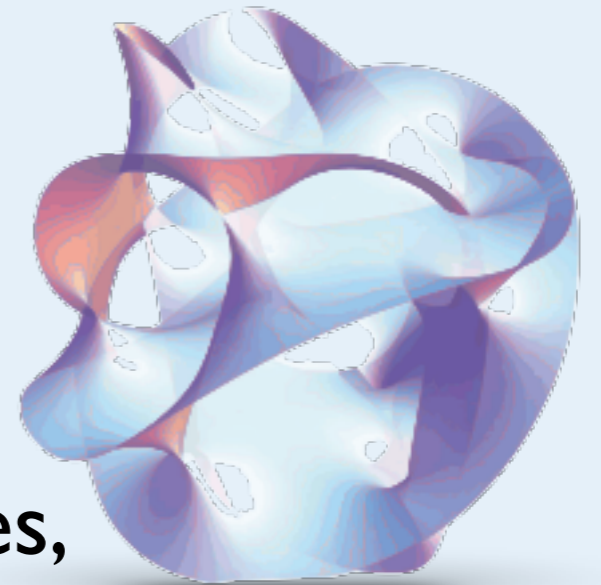
- Holography
- Higher spins
- $N=4$ SYM: Integrability, non-perturbative amplitudes
- Black Holes: info paradox, interior, locality, BMS
- Gravity from quantum information; emergent geometry through entanglement (ER=?=EPR, wormhole)
- Quark-Gluon plasma, hydrodynamics & gravity
- cond. matter, SYK model





Strings

- Compactifications, pheno model building, stringy inflation
- de Sitter vacua, KKLT, landscape
- F-Theory, non-perturbative dualities
- non-pert quantum geometry, D-branes, topological strings, mirror symmetry
- Geometr representation of SYM, classification of CFTs, (0,2) Susy in 6d
- BPS geometry, wall crossing, state counts in black holes, modular moonshine
- Scattering Amplitudes, supergravity



A complex network of glowing blue neurons is shown against a black background. The neurons are interconnected by a dense web of thin, branching processes, creating a complex, interconnected pattern. The central part of the image features the text "Thank you!" in a white, sans-serif font.

Thank you!