

Theoretical Physics Division

KoF-presentation

May 9, 2017

We do theoretical and mathematical physics

- **String theory**

AdS/CFT correspondence, holography,
string compactifications, string cosmology

- **Quantum field theory**

Scattering amplitudes, integrability in gauge theories,
bootstrap, supersymmetry on curved spaces, localization

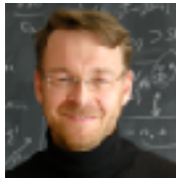
- **Mathematical Physics**

mathematical aspects of supersymmetric theories,
vertex algebras, mirror symmetry

Division Highlights

- **We do world-leading research in several subfields**
- **Our research is carried out at the individual level and all external funding is through individual grants**
- **We have a strong research environment for theoreticians that encourages collaboration with the different members of the group.**
- **We have recently hired several young faculty from world renowned institutions in the United States and Europe**

Faculty



**Maxim Zabzine, Professor,
Head of the division**



Joseph Minahan, Professor



**Konstantin Zarembo,
Professor/Nordita**



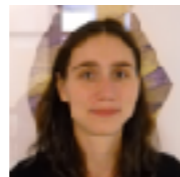
Ulf Danielsson, Professor



**Ulf Lindström, Senior Professor
20 %**



**Guido Festuccia,
Associate Professor**



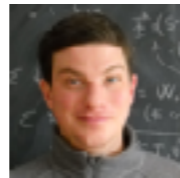
**Monica Guica,
Associate Professor 20 %**



**Jian Qiu,
Associate Professor
joint with Math**



**Lisa Freyhult,
Associate Professor**



**Henrik Johansson,
Associate Professor**



**Marco Chiodaroli,
Assistant Professor**



**Giuseppe Dibitto,
Assistant Professor**



**Magdalena Larfors,
Assistant Professor**

11 Postdocs, 14 PhD students



**Agnese Bissi,
tenure track (from October 2017)**

**+2 tenure track position (from fall 2017)
+ more postdocs and PhD students**

External grants:

KAW project joint with math (Ekholm-Zabzine 2015-2020), 35 MSEK

KAW project joint with Nordita (Minahan-Zarembo 2016-2021), 34 MSEK

3 KAW-fellows (Johansson 2014-2019, Guica 2016-2021, Bissi 2017-2022),
23 MSEK + 15 MSEK (cofunding)

Starting ERC (Festuccia 2016-2021), 11 MSEK

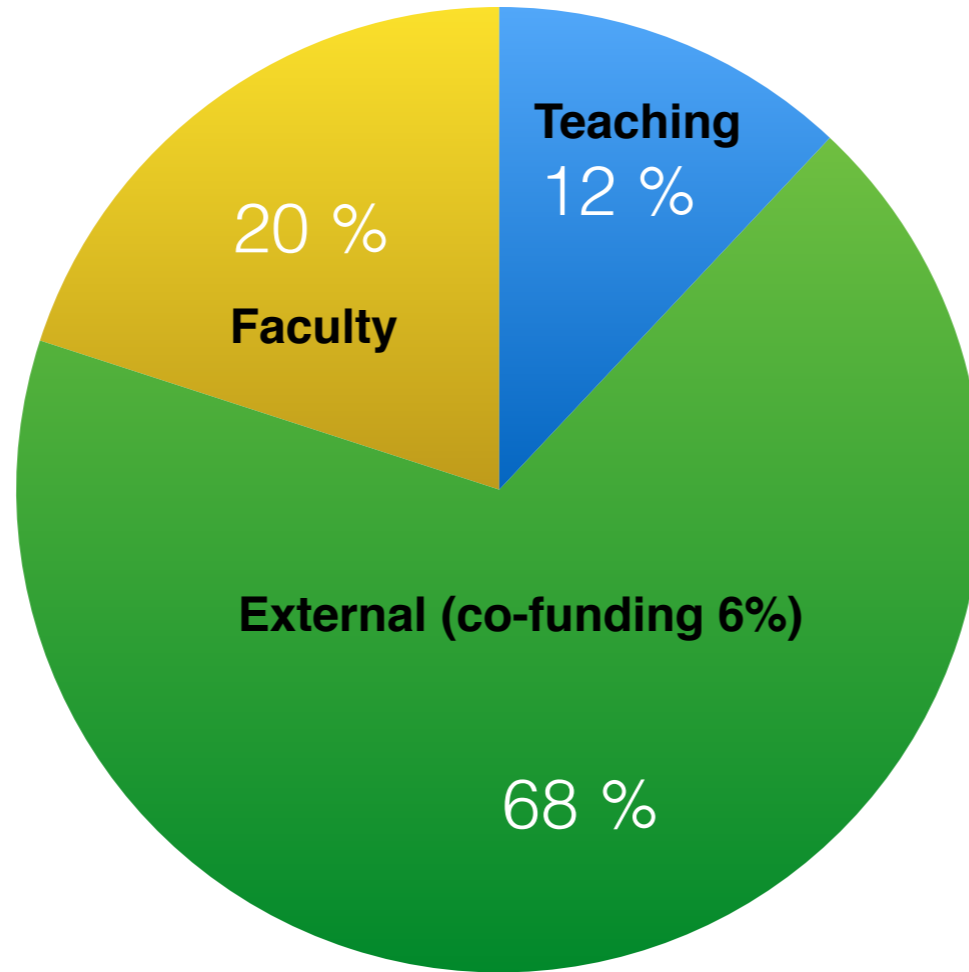
Swedish Foundation's starting grant (Johansson 2016-2021), 14 MSEK

6 VR grants (Danielsson 2016-2019, Guica 2016-2019, Johansson 2014-2018 ,
Larfors 2017-2020, Minahan 2017-2020, Zabzine 2015-2018), 12 MSEK

~ 144 MSEK

2016

6 MSEK



12 MSEK



31,6 MSEK



**in 2017 the situation is similar, the external funds will constitute
75 % of total funding of the group**

in 2018, the trend will continue

We are using external money to fund tenure track positions

Activities



Regular theoretical physics seminars with top speakers

Regular journal club



Geometry and Physics seminars (jointly with Math Department)

Monthly joint seminars with Nordita

Weekly Wallenberg seminars with Math



NORDITA

Nordic Institute of Theoretical Physics

Currently two joint associate professor positions (Guica, Johansson)

Two more joint tenure track positions have been approved and the applications have been received. Offers are expected to be made in 2017 (KAW funded)

More systematic interaction is needed

Issues

- **Subcritical long-term faculty funding (<20% after 2016)**
- **Different hiring and funding standards across the department and the faculty**
- **Better formal setting for the joint appointments (both within the university and outside)**
- **Insufficient administrative support at all levels**