

"SPACE – TIME – MATTER: Analytic and Geometric Structures"
A Book about CRC 647 results published



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Staudacher (Eds.)

**SPACE – TIME – MATTER:
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This monograph describes some of the most interesting results obtained by the mathematicians and physicists collaborating in the CRC 647 "Space – Time – Matter", in the years 2005 - 2016. It concerns the mathematical and physical foundations of string and quantum field theory as well as cosmology. The work starts with an excellent introduction by the editors Jochen Brüning and Matthias Staudacher, both members of IRIS Adlershof, that gives an historical overview of the field and vividly retells the development of the CRC. Then each project of the final funding period is summarized and also represented in detail by the following 15 chapters, many contributed by IRIS scientists:

- *Dyson–Schwinger equations: Fix-point equations for quantum fields* by Dirk Kreimer (IRIS member)
- *Hidden structure in the form factors of $N = 4$ SYM* by Dhritiman Nandan (former member at AG Staudacher) and Gang Yang
- *On regulating the AdS superstring* by Valentina Forini (IRIS Junior member)
- *Yangian symmetry in maximally supersymmetric Yang-Mills theory* by Livia Ferro, Jan Plefka (IRIS member), and Matthias Staudacher (IRIS member)
- *Geometric analysis on singular spaces* by Francesco Bei (former member at AG Brüning), Jochen Brüning (IRIS member), Batu Güneysu (former IRIS young researcher and member at AG Brüning), and Matthias Ludewig

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