



**ΚΟΙΝΟ ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ ΚΑΙ  
ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ & ΚΕΝΤΡΟΥ ΘΕΩΡΗΤΙΚΗΣ ΦΥΣΙΚΗΣ ΚΡΗΤΗΣ /  
JOINT CCQCN -CCTP SEMINAR**

**Tuesday 15 March 2016,**

**15:00-16:00**

**2nd Floor Seminar Room**

**Conformal invariance in momentum space**

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**Abstract**

Conformal invariance places powerful constraints on the properties of a quantum field theory. In position space, the form of 2- and 3-point correlation functions is completely fixed by this symmetry up to just a few constants. In this talk, we examine the corresponding story in momentum space. Starting from first principles, we show how to construct the momentum-space 2- and 3-point functions of a general conformal field theory. For certain space-time and operator dimensions a non-trivial renormalisation is required due to the presence of contact terms. We show how to perform this renormalisation directly in momentum space, leading to novel conformal anomalies and beta functions. The results have potential applications to many fields, including holographic cosmology and condensed matter physics.

