

SUMMER SCHOOL
Quantum to Cosmos: Ideas and Applications
June 25 — July 4, 2019
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Lecture course

Holography, Finite-Temperature QFT and Hydrodynamics

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- **Books on Gauge-String Duality (Holography)**

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3. J. Zaanen, Y. Liu, Y.-W. Sun, K. Schalm, “Holographic Duality in Condensed Matter Physics”, Cambridge U. Press, 2015.
4. H. Nastase, “Introduction to the AdS/CFT Correspondence”, Cambridge U. Press, 2015.
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7. E. Kiritsis, “String theory in a nutshell,” Princeton U. Press, Updated edition, 2019 (Chapters 13-15).

- **Reviews directly relevant for this course**

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- **Duality in Lattice Statistical Mechanics**

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- **Duality in QFT**

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- **QFT at Finite Temperature and Density**

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- **Large N expansion**

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- **Black hole thermodynamics, Bekenstein-Hawking entropy and microstates counting**

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- **Holography and phenomenology of heavy ion physics**

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- **Books on string theory**

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- **Online lecture courses**

J. McGreevy, MIT lectures, TASI lectures and other recordings online.

S. Hartnoll, Nordita lectures and other recordings online.

H. Liu, MIT lectures online.