Josh | Nohle

Education

2009–2015 **Ph.D. in Physics** (GPA: 3.96/4.00) | University of California, Los Angeles | Los Angeles, CA

- Advisor: Zvi Bern
- Focus: With a team of collaborators, performed previously intractable scattering-amplitude computations to unravel underlying structures and symmetries of quantum field theories, focusing particular interest on quantum gravity and its ultraviolet divergences—infinities that obstruct the union of general relativity and quantum mechanics

2004–2009 **B.S. in Physics, B.S. in Mathematics** (GPA: 4.00/4.00) | University of Cincinnati | Cincinnati, OH

- Physics (High Honors) | Mathematics (Honors)
- Electrical Engineering (6 quarters) | Industrial Management (4 quarters)

Experience

Sept. 2015 – Present **Postdoctoral Fellow** | Nordic Institute for Theoretical Physics (Nordita) | Stockholm, Sweden

- Coupled physical insights with efficient algorithms to build a library of analytical and numerical tools in the Wolfram Language (Mathematica) for the calculation of scattering amplitudes, utilizing the parallel-processing capabilities of UCLA's Hoffman2 Cluster
- Discovered new—and elucidated existing—low-energy theorems for seemingly disparate particles such as gluons, gravitons and dilatons, with a focus on quantum corrections

Mar. 2012 – Aug. 2015 **Graduate Student Researcher** | UCLA, Department of Physics | Los Angeles, CA

- Through leading-edge computations, changed 30-year-old ideas concerning the role of ultraviolet divergences, evanescent effects and dualities in nonsupersymmetric theories of gravity through two loop orders of quantum corrections
- Constructed first nonsupersymmetric, loop-level evidence for the conjectured duality between the color algebra of Yang-Mills theory and the kinematics of gravity scattering amplitudes

Sept. 2009 – June 2015 **Teaching Assistant** | UCLA, Department of Physics | Los Angeles, CA

- Recipient of the "Outstanding Teaching Award" for the 2012–2013 academic year
- 19 quarters of teaching experience, from introductory labs to upper-division courses

June 2007 – Jan. 2008 **Research Assistant** | University of Cincinnati, Nanomaterials Physics Group | Cincinnati, OH

- Fabricated solid immersion lenses to enhance spatial resolution in nanostructure imaging

Sept. 2006 – Mar. 2007 **Electrical Product Engineering Co-Op** | Texas Instruments | Stafford, TX

- Initiated, designed and coded an addition to the digital-signal-processor test program
- Tested chips for a variety of operating parameters and investigated failure data

June 2005 – Sept. 2005 **Planning and Logistics Co-Op** | GE Aviation | Evendale, OH

- Programmed a comprehensive, user-friendly macro with VBA in Excel to consolidate and analyze data patterns in outside-vendor schedule stability

Publications

Summary: 7 papers, 180+ citations | Profile: `inspirehep.net/author/profile/J.Nohle.1`

Recent:

- P. Di Vecchia, R. Marotta, M. Mojaza and J. Nohle, *"New Soft Theorems for the Gravity Dilaton and the Nambu-Goldstone Dilaton at Subsubleading Order,"* Phys. Rev. D 93, 085015 (2016)
- Z. Bern, S. Davies and J. Nohle, *"Double-Copy Constructions and Unitarity Cuts,"* Phys. Rev. D 93, 105015 (2016)
- Z. Bern, C. Cheung, H.-H. Chi, S. Davies, L. Dixon and J. Nohle, *"Evanescent Effects Can Alter Ultraviolet Divergences in Quantum Gravity without Physical Consequences,"* Phys. Rev. Lett. 115, 211301 (2015)

Programming Skills

Proficient: C++ | Wolfram Language (Mathematica)

Sample: Reduction of tensor integrals to scalar integrals | `github.com/nohle/resume-and-code-sample`

Kaserngatan 8, 1311 – SE-761 46 Norrtälje, Sweden
After Sept. 1st: 3365 Overland Ave., Apt. 6 – Los Angeles, CA 90034
✉ *josh.nohle@gmail.com* • *nohle* • *nohle*