Curriculum Vitae

JUN-HWAN CHOI

Postdoctoral Researcher, Department of Physics and Astronomy, University of Kentucky
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Education

Ph.D. in Astronomy, University of Massachusetts at Amherst (MA, USA), 2007
Thesis : The Dynamics of Satellite and Dark Matter Halo Interactions on Galaxy Formation and Evolution
Advisers : Prof. Martin D. Weinberg & Prof. Neal Katz
M.S. in Astronomy, Yonsei University (Seoul, Korea), 1999
M.S. thesis : The Study of Globular Cluster with Luminosity Function
Advisers : Prof. Young-Wook Lee & Prof. Yong-Cheol Kim
B.S. in Astronomy (minor in Physics), Yonsei University (Seoul, Korea), 1997

Areas of interests

Theoretical and Numerical Astrophysics, Cosmology, Galaxy formation and evolution

Grant & Awards

2010-2011 NASA Hubble Space Telescope Cycle 18, Theory grant, "Physical Properties of High-Redshift WFC3 Galaxies" (Co-I, 09/01/2010-08/31/2011, $49,212)
2010-2011 TeraGrid Resource Allocations Committee for the Texas Advanced Computing Center : 750,000SM
2009-2010 TeraGrid Resource Allocations Committee for the Texas Advanced Computing Center : 600,000SM
2009 AAS International Travel Grant $1134.98 from NSF
2008-2009 TeraGrid Roaming start up allocations for the Texas Advanced Computing Center : 50,000SU + 30,000SU (supplement)
2001 Five College Astronomy Graduate Research Fellowship
1993, 1996 Yonsei Scholarship, Yonsei University

Experiences

Research
- Postdoctoral Researcher, Department of Physics and Astronomy, University of Kentucky, 2010 -
- Postdoctoral Researcher, Department of Physics and Astronomy, UNLV, 2007 - 2010

• Research Assistant, Department of Astronomy, University of Massachusetts, 2000 - 2007
• Research Assistant, Center for Space Astrophysics, Yonsei University, 1999

Teachings

• Organizer for Astronomy Journal Club, Department of Physics and Astronomy, UNLV, 2008 - 2009
• Teaching Assistant, Department of Astronomy, University of Massachusetts, 1999-2001
• Teaching Assistant, Department of Astronomy, Yonsei University, 1997-1998

Computation

• Assistant Administrate for Beowulf cluster in Department of Astronomy at University of Massachusetts (2002)
• Experience with FORTRAN, C/C++, IDL, Perl, MATLAB programming
• Expertise in implementing and analyzing both N-body galactic dynamics simulation and N-body/hydrodynamics cosmological simulation.

Professional Services

• Members of Korean Space Science Society (1998 -)
• Members of American Astronomical Society (2007 -)

Publications

Referred Publications

"Effect of radiative transfer on damped Lyman-alpha and Lyman limit systems in cosmological SPH simulations"
H. Yajima, **J.-H. Choi**, & K. Nagamine 2012, accepted for publication in MNRAS (arXiv:1112.5691)

"Duty Cycle and the Increasing Star Formation History of z $>$ 6 Galaxies"
J. Jaacks, K. Nagamine, & **J.-H. Choi** 2012, MNRAS, 427, 403

"Steep faint-end slopes of galaxy mass and luminosity Functions at z $>$ 6 and the implications for reionization"
J. Jaacks, **J.-H. Choi**, K. Nagamine, R. Thompson, & S. Varghese 2012, MNRAS, 420, 1606

"On the inconsistency between the estimates of cosmic star formation rate and stellar mass density of high redshift galaxies"
J.-H. Choi & K. Nagamine 2012, MNRAS, 419, 1289

"Gamma-ray burst rate: high-redshift excess and its possible origins"
F. Virgili, **J.-H. Choi**, B. Zhang, K. Nagamine, & **J.-H. Choi** 2011, MNRAS, 417, 3025

"Galaxy Formation in Heavily Overdense Regions at z 10: The Prevalence of Disks in Massive Halos"
E. Romano-Diaz, **J.-H. Choi**, I. Shlosman, & M. Trenti 2011, ApJL, 738, 19

"Escape fraction of ionizing photons from high-redshift galaxies in cosmological SPH simulations"
H. Yajima, **J.-H. Choi** & K. Nagamine 2011, MNRAS, 412, 411

"Multicomponent and Variable Velocity Galactic Outflow in Cosmological SPH Simulations"
J.-H. Choi & K. Nagamine 2011, MNRAS, 410, 2579

"Luminosity Distribution of Gamma-Ray Burst Host Galaxies at redshift =1.0 in Cosmological Simulation"
Yuu Niino, **J-H Choi**, Masakazu A. R. Kobayashi, Kentaro Nagamine Tomonori Totani & Bing Zhang, 2010, ApJ, 726, 88

"Effect of UV background and local stellar radiation on the HI column density distribution"
K. Nagamine, **J.-H. Choi** & H. Yajima, 2010, ApJ, 725, 219

"Effects of cosmological parameters and star formation models on the cosmic star formation history"
J.-H. Choi & K. Nagamine 2010, MNRAS, 407, 1464

"The dynamics of satellite disruption in cold dark matter haloes"
J.-H. Choi, M. D. Weinberg & N. Katz 2009, MNRAS, 400, 1247

"Erratum: Effects of metal enrichment and metal cooling in galaxy growth and cosmic star formation history"
J.-H. Choi & K. Nagamine 2009, MNRAS, 395, 1776

"Effects of metal enrichment and metal cooling in galaxy growth and cosmic star formation history"
J.-H. Choi & K. Nagamine 2009, MNRAS, 393, 1595

"The dynamics of tidal tails for massive satellites"
J.-H. Choi, M. D. Weinberg & N. Katz 2007, MNRAS, 381, 987

"Dark matter halo response to the disk growth"
J.-H. Choi,Y. Lu, H. Mo & M. D. Weinberg 2006, MNRAS, 372, 1869

Non-Referred Publications

"Metallicity of Gamma-Ray Burst Progenitors: Connection between Star Formation and Gamma-Ray Burst Production"
Niino, Y., **Choi, J.-H.**, Kobayashi, M. A. R., Nagamine, K., Totani, T.,& Zhang, B, 2010 in AIP Conference Proceedings, Volume 1269, pp. 345-347 (2010)

"Infrared Emission from High-Redshift Galaxies in Cosmological SPH Simulations"
Nagamine, K., Lee, T. S., & **Choi, J.-H.** 2009 in ASP Conference Series "*Reionization to Exoplanets: Spitzer's Growing Legacy*", ed. P. Ogle (arXiv:1007.2018)

"The Growth of Galaxies in Cosmological simulation"
J.-H. Choi, N. Katz, C. Murali, D. H. Weinberg, R. Davé & L. Hernquist, 2002, in ASP Conference Series, vol. 283, "*A New Era in Cosmology*", ed. N. Metcalfe & T. Shanks (San Francisco:ASP), 343

Submitted Papers

"The Initial Conditions and Evolution of Isolated Galaxy Models: Effects of the Hot Gas Halo"
J.-S. Hwang, C. Park, & **J.-H. Choi** 2012, submitted to JKAS

Papers in Preparation

"SUPERMASSIVE BLACK HOLE FORMATION AT HIGH REDSHIFTS VIA DIRECT COLLAPSE: PHYSICAL PROCESSES IN THE EARLY STAGE"
J.-H. Choi, I. Shlosman, & M. C. Begelman

Talks

Seoul National University, September 2011
"Formation of very high-z galaxies"

Korean Institute for Advanced Study, September 2011
"Formation of very high-z galaxies"

Yonsei University, September 2011
"Formation of very high-z galaxies"

OPEN KIAS SUMMER INSTITUTE, August 2011
"Challenges in Simulating Galaxies"

University of Kentucky, October 2010
"Star formation and its feedback in LCDM cosmolog"

University of Groningen, March 2010
"Dynamics of satellite disruption"

American Astronomical Society, AAS Meeting 215, 376.02
"Effects of Star Formation Models on The Cosmic Star Formation History"

SFR@50: Filling the Cosmos with Stars at ABBAZIA DI SPINETO SARTEANO, ITALY
"Cosmic star formation rate in LCDM cosmological simulation"

Lorentz center workshop in Leiden Netherlands : The Chemical enrichment of the Intergalactic Medium
"The effect of multiphase galactic winds on galaxy formation"

Sejong University, April 2009
"Cosmic star formation history in LCDM cosmological simulation"

American Astronomical Society, AAS Meeting 213, 344.02
"Effects of metal enrichment and metal cooling in galaxy growth and cosmic star formation history"

KITP Conference: Back to the Galaxy II
"The Dynamics of Satellite Disruptions in Cold Dark Matter Halo"

American Astronomical Society, AAS Meeting 211, 126.02
“The Dynamics of Satellite and Dark Matter Halo Interactions on Galaxy Formation and Evolution”

Yonsei University, June 2006
“Dark matter halo response on the disk growth”

University of Massachusetts Research presentation, February 2002
“Noise-driven evolution of galaxy and galactic halo by dark matter halo substructure ”

Yonsei University, June 2001
“The Growth of Galaxies in Cosmological Simulations”

University of Massachusetts Research presentation, February 2001
“The Effects of Environment on Galaxy Assembly ”

Dozens of Department Journal Club Talks about various topics in astrophysics including first star, semi-analytic model in galaxy formation, CMB anisotropy, weak lensing, SDSS galaxy clustering measurement, and so on.