

The 9th International Workshop on Chiral Dynamics 2018

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*The 9th International workshop on Chiral Dynamics
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1. Preface

The 9th International Workshop on Chiral Dynamics 2018 brought the series back to the Triangle Universities Nuclear Laboratory (TUNL) in Durham, NC since its 5th gathering in 2006. The field of Chiral Dynamics has matured over the 25-year span of the series which started in 1994 at MIT, followed by Mainz (1997), Jefferson Lab (2000 and 2012), Bonn (2003), Duke (2006, 2018), Bern (2009), and Pisa (2015). The workshop has traditionally drawn equal participation from theorists and experimentalists to showcase the most recent advances in the field, and to discuss future directions. The 9th workshop maintained the organization of the scientific program into topical groups of: Hadron Structure, Goldstone-Boson Dynamics, and Few-Body Dynamics. As observed elsewhere in the field, the workshop illuminated the increased effort in the low-energy QCD community of using lattice simulation techniques applied across the sub-fields and the increased demand for solutions from lattice calculations. Nearly 120 participants attended the workshop, which delivered twenty plenary talks, and over ninety parallel presentations. Research highlights presented in this workshop include results from muon $g-2$ measurements, calculations of the properties of light nuclei in lattice QCD, studies of the spin structure of the nucleon, pion life-time measurements, determinations of the electromagnetic and spin polarizabilities of nucleons via Compton scattering, applications of chiral dynamics in the electroweak sector, and various topics treated in the framework of lattice chiral effective field theory. The program also included a prelude to the physics opportunities at a future US based electron-ion collider. In addition, the workshop welcomed an increased participation from colleagues in Asia. To further facilitate this development, and the increased interest in the field from the Asian region, for the first time in the history of this workshop series, the organizers have selected the next workshop to be held in Beijing, China. These proceedings present topics convened in this 9th workshop and provide a comprehensive review of the field, highlighting recent accomplishments and discussing challenges that will motivate research in the coming years. We look forward to gathering and discussing exciting new developments in the field in Beijing in 2021.

Chairs,

Mohammad W. Ahmed

Haiyan Gao

Calvin R. Howell, and

Dean Lee

September 17-21, 2018, Durham, NC

2. International Advisory Committee

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Hartmut Wittig	University of Mainz	Germany

3. Working Group Conveners

Goldstone-Boson Dynamics	Jacobo de Elvira	University of Bern
	Jose Luis Goity	Jefferson Laboratory
	Liping Gan	University of North Carolina - Wilmington
	Simona Giovannella	National Institute for Nuclear Physics, INFN
	Carsten Urbach	University of Bonn
Hadron Structure	Jian-Ping Chen	Jefferson Laboratory
	William Detmold	Massachusetts Institute of Technology
	Harald Griesshammer	George Washington University
	Hermann Krebs	University of Bochum
	Rory Miskimen	University of Massachusetts
Few-Body Dynamics	Jose Manuel Alarcón Soriano	Jefferson Laboratory
	Evgeny Epelbaum	University of Bochum
	Douglas Higinbotham	Jefferson Laboratory
	Daniel Phillips	Ohio University
	Werner Tornow	TUNL & Duke University