

Nuclei SciDAC Meeting
Eldorado Hotel, Santa Fe, NM
June 16 – 19, 2014

Date: 6/11/14

Sunday June 15

6:30 - 8:30 PM Light snacks/no-host bar
Sunset Room

Monday June 16

8:00 - 8:30 Registration Zia Conference Room
\$10 registration fee for snacks and coffee

8:30 - 8:40 Anthony Redondo
(Theoretical-Div Leader) Welcome
8:40 – 9:00 Joe Carlson Introduction/Goals for the Meeting
8:50 - 9:00 Dick Furnstahl Webpage
9:00 - 9:15 Witek Nazarewicz NUCLEI, Long Range Plan, and FRIB

Ab-Initio (NCSM)

9:20-9:50 James Vary Plans for improved chiral Hamiltonians
9:50-10:10 Chao Yang Trace Minimization for Nuclear
Configuration Interaction

10:10 - 10:40 break

10:40-11:10 Pieter Maris Recent Results with Chiral NN + 3N Interactions
11:10-11:30 George Papadimitriou Progress and Plans for the No Core
Gamow Shell Model
11:30-11:50 Mark Caprio Emergence of rotational bands in ab-initio no-core
configuration interaction calculations for p-shell
nuclei
11:50-12:10 Kyle Wendt Robust Constraints on pi-N LECs for inter-nucleon
interactions

12:10 - 2:00 lunch/discussions

Ab-Initio (QMC)

2:00-2:30	Rusty Lusk	Challenges for MPI at Exascale, and a library for scalable load balancing
2:30-2:50	Bob Wiringa	Recent results on CSB and Momentum Distributions
2:50-3:10	Steve Pieper	Calculations with correlated GFMC propagations
3:10-3:30	break	
3:30-3:50	Joel Lynn	GFMC with chiral interactions
3:50-4:10	Alessandro Lovato	Electroweak Response functions; from ^{12}C to Neutron Matter
4:10-4:30	Stefano Gandolfi	Nuclei and Matter with AFDMC
4:30-5:00	Hai Ah Nam	INCITE/general computing update

Tuesday Jun 17

Similarity Renormalization Group and Related Research

8:40-8:50	Dick Furnstahl	Overview of OSU activities
8:50-9:05	Alex Dyhdalo	BBG revisited
9:05-9:25	Sushant More	Infrared Basis Corrections
9:25-9:45	Sebastian Koenig	Ultraviolet Basis Corrections
9:45-10:00	Sarah Wesolowski	Bayesian methods for LEC fitting
10:00-10:30	break	
10:30-11:00	Scott Bogner	Overview: Progress on In-Medium SRG
11:00-11:20	Titus Morris	Novel Applications of the Magnus Expansion to Solve the In-Medium SRG equations
11:20-11:40	Nathan Parzuchowski	Ab-Initio Excited States in Nuclei
11:40-12:00	Masha Sosonkina	An Interface of Optimization Software with Ab Initio Nuclear Structure
12:00 - 1:45	lunch/discussions	
DOE Overview		
2:00-2:15	Ted Barnes	views from NP
SRG (continued)		
2:15-2:45	Heiko Hergert	In-Medium SRG
2:45-3:00	Dick Furnstahl	Discussion on Bayesian Approaches in NUCLEI
3:00-3:30	break	
Coupled Cluster		
3:30-4:00	Thomas Papenbrock	Overview: Coupled-Cluster effort in NUCLEI
4:00-4:20	Hai-Ah Nam	Computing updates from Coupled-Cluster
4:20-4:40	Yannen Jaganathen	Gamov Shell Model effective interactions in the p-sd shells
4:40-5:00	Angelo Signoracci	Ab-Initio Bogoliubov coupled cluster theory for open shell nuclei

Wednesday Jun 18

Nuclear Density Functional Theory

8:40-9:10	Nicolas Schunck	Overview: Advances in DFT for NUCLEI
9:10-9:30	Stefan Wild	Numerical optimization for nuclear physics calibrations
9:30-9:50	Jordan McDonnell	Uncertainty Quantifications for Nuclear Density Functional Theory
9:50-10:10	George Fann	Madness developments for DFT
10:10-10:30	break	
10:30-10:50	Dave Higdon	A Bayesian approach for combining DFT simulations with physical measurements to constrain parameters and estimate prediction uncertainties.
10:50-11:10	Nobuo Hinohara	QRPA calculations using the complex-energy finite amplitude method
11:10-11:30	Javid Sheikh	Spontaneous Fission Studies using the Adiabatic Time-Dependent HFB Model
11:30-11:40	Chunli Zhang	Triaxial Rotational Bands in neutron-rich Mo-Ru region
11:40-12:00	Yue Shi	Madness benchmarking and shell structure of Superheavies

12:00-2:00 Lunch/Discussions

Single and Double-Beta Decay

2:00-2:30	Jon Engel	Overview of Double-Beta Decay
2:30-2:50	Mika Mustonen	Finite Amplitude method and Beta Decay
2:50-3:10	Roman Senkov (CMU)	Neutrinoless double beta decay of ^{48}Ca , ^{82}Se and ^{76}Ge in the shell model
3:10-3:30	break	
3:30-4:00	Joe Carlson	Progress in Year 1-2: Highlights, etc.
4:00-5:00	Business Meeting	Deliverables, Planning for Year 3
7:00 – 9:00	Conference Dinner	Blue Corn Café and Brewery (Downtown) 133 Water Street, Santa Fe, NM 87501

Thursday June 19

Nuclear Astrophysics

8:40-9:10	Chuck Horowitz	Overview: Nuclear Pasta Simulations
9:10-9:30	Andre de Silva Schneider	Progress on Molecular Dynamics Simulations of Nuclear Pasta
9:30-9:50	Sergey Postnikov	First density functional calculations of Nuclear Pasta
10:10-10:30	break	
10:30-11:00	Andrew Steiner	Neutron Star Glitches, Entrainment, and the crustal fraction of the moment of inertia
11:00-11:20	Diego Lonardoni	The hyperon puzzle: new hints from QMC calculations
11:20-11:40	Ermal Rrapaj	Neutrino and Axion reactions in supernovae and the r-process
11:40-12:00	Wendell Misch	Electron capture during stellar collapse