AGENDA

9th ANNUAL MEETING Of The FUSION SCIENCE CENTER FOR EXTREME STATES OF MATTER

REGULAR MEETING, August 4, 2010

SPECIAL MEETING ON ELECTRON DIVERGENCE, August 5-6, 2010

Lawrence Livermore National Laboratory
Livermore CA
B481 R2005

AUGUST 4

7:45 am	Badging Westgate Badge Office	B. McDonald
8:00	Check-In	N.Reason/J.Huffman
8:55	Safety, Security and Administrative Brief	D.Correll
9:00	Welcome	E. Moses (LLNL)
9:15	Overview of the Fusion Science Center: Present and Future	R. Betti (LLE)
	SHOCK IGNITION	
9:30	Overview of Shock Ignition	L. J. Perkins
9:50	Shock Ignition Designs for the National Ignition Facility	K. Anderson (LLE)
10:10	Laser-Plasma Interaction Experiments at Shock-Ignition Relevant Intensities	W. Theobald (LLE)
10:30	Break	
	PROTON RADIOGRAPHY AND MAGNETIC FIELDS	
10:45	Proton Radiography of EM Fields on OMEGA	C. Li (MIT)

Prepared by LLNL under Contract DE-AC52-07NA27344. LLNL-MI-446731.

11:05	Areal Density Measurements on the NIF	R. Petrasso (MIT)
11:25	Magnetic Flux Compression Experiments on OMEGA	M.Hohenberger/G.Fiksel (LLE)
11:45	Discussion on Magnetic Fields and Proton Radiography	
12:15	Lunch	
	FAST IGNITION	
1:30	New Hybrid Capabilities of OSIRIS	J. Tonge (UCLA)
1:50	3D Simulations of Channeling and Hole Boring	C. Ren (LLE)
2:10	PCLS Simulations of Cone-Guided Fast Ignition	Y. Sentoku (UNR)
2:30	Overview of the LLNL effort towards a Point Design for Fast Ignition	P. Patel (LLNL)
2:50	Discussion on Fast Ignition Simulations	
3:10	Break	
3:20	Fast Ignition Integrated Experiments on OMEGA	W. Theobald (LLE)
3:40	Electron Transport in WDM	R. Stephens (GA)
4:00	Source and Plasma Characterization on EP	T. Yabuuchi (UCSD)
4:20	Effect of Z Material on Absorption and Transport	F. Beg (UCSD)
4:40	Relativistic-Electron Jet from High-Intensity Laser-Solid Interaction	P. Nilson (LLE)
5:00	Discussion on Fast Ignition Experiments	

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SPECIAL FSC MEETING ON ELECTRON DIVERGENCE IN FAST IGNITION

AUGUST 5-6

LAWRENCE LIVERMORE NATIONAL LABORATORY

LIVERMORE, CA

(Short presentations (<= 4 slides) can be given during the discussion sessions. If you would like to give a short presentation please contact Prof. Beg at fbeg@ucsd.edu **and the moderator(s) of the session)**

AUGUST 5

8:45	Welcome	D. Correll/C. Keane (LLNL)
8:50	Goals of the Meeting	R. Betti (LLE)
	Invited Talks:	
9:00	Review of the Measurements on Fast Electron Divergence	M. Storm (OSU)
9:45	Review of PIC Simulations of Electron Divergence in Fast Ignition	A. Kemp (LLNL)
10:15	Break	
10:25	The Effects of Electron Divergence on the Point Design	D. Strozzi
10:45	Proton Radiography of EM Fields on OMEGA	C. Li (MIT)
10:50	Effects of Electron Divergence on Minimum Energy required for Ignition	J. Honrubia (UPM)
11:30	NIF Tour – Group A (1/2 the group)	
12:30	NIF Tour – Group B (1/2 the group)	
11:30-1:30	One Hour Lunch when not touring NIF	

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1:30	Update on the National Ignition Campaign	B. MacGowan (LLNL)
2:10	Electron Collimation by Resistivity Gradients	A. Robinson (RAL)
2:35	The Effects of Self-generated Magnetic Fields on Electron Divergence	A. Solodov (LLE)
2:45	Preliminary Results on Recent Titan Experiments on Electron Divergence	L. Van Woerkom (OSU)

3:05-6:00 Discussion:

Short (<= 4 slides) presentations are allowed during the discussion

Moderators: Beg (fbeg@ucsd.edu) and Kemp (kemp7@llnl.gov)

Questions:

1) Are experiments in the correct regime? (pulse length, intensity, focal spot, preplasma profile, transport geometry) Is EP enough?
2) Is the experimental evidence clear and how does it apply to ignition?
3) What does that tell us-- the divergence would be in an integrated experiment (given constraints from point design as to geometry, prepulse, and implosion-caused distortion)?
4) Do we have simulations that match experimental parameters, do they agree, and if so what does that tell us about the prospects for core-heating or ignition?

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AUGUST 6

8:45	Goals of the Session	A. Solodov (LLE)
	Results from the Test Problems and Discussion	
9:00	LLE Results on the Test Problems	
9:20	LLNL Results on the Test Problems	
9:40	UCSD/UNR Results on the Test Problems	
10:00	Break	
10:15	TBC – UCLA Results on the Test Problems	
10:35	OSU Results on the Test Problems	
10:55	Others?	
	Discussion:	
11:15	Moderators: Solodov (asol@lle.rochester.edu) and Strozzi (strozzi2@llnl.gov) Do the simulations agree and can they predict electron divergence in ignition scale targets?	
12:15	Lunch	

1:30-4:00 Discussion:

Short (<= 4 slides) presentations are allowed during the discussion

Moderators: Stephens (rich.stephens@gat.com) and Honrubia (Javier.honrubia@upm.es)

Questions:

1) What changes in planned capabilities are absolutely required for core heating? for ignition? Two omega? >10^20 W/cm^2? <40 micron spot size? >100 J ignition energy
2) Is there a collimation strategy that a) can be implemented in target structure and b) will survive implosion and through the length of the ignition pulse?
3) What is the logical next step - on EP, on NIF. Must we directly characterize e-collimation or is core-heating from n signal sufficient diagnostic?

4:00	Summary of the Meeting	R. Betti (LLE)
4:30	Adjourn	

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List of registered attendees

Akli, Kramer
Anderson, Kenneth
Atzeni, Stefano
Bartal, Teresa
Beg, Farhat
Bellei, Claudio
Betti, Riccardo
Chen, Cliff
Chrisman, Brian
Cohen, Bruce
Correll, Donald
Davies, Jonathan
Evans, Roger
Fiuza, Frederico
Freeman, Richard
Higginson, Drew
Ho, Darwin
Hohenberger, Matthias
Honrubia, Javier
L. Charlie Jarrott
Kemp, Andreas
Kemp, Gregory
King, Frank
Krygier, Andrew
Larson, David
Lasinski, Barbara
Levy, Matthew
Li, Chikang
Link, Anthony
Ma, Tammy
May, Joshua
McLean, Harry
Meeker, Donald
Meyerhofer, David
Mori, Warren
Morrison, John
Nilson, Philip
Ovchinnikov, Vladimir
Paradjar, Bhooshan
Patel, Pravesh
Perkins, John
Poole, Patrick
Ren, Chuang
Ridgers, Christopher
Robinson, Alexander
Sawada, Hiroshi
Schumacher, Douglass
Sentoku, Yasuhiko
Shay, Henry
Solodov, Andrey
Stephens, Richard
Storm, Michael
Strozzi, David
Tabak, Max
Theobald, Wolfgang
Tonge, John
Town, Richard
Van Woerkom, Linn
Wei, Mingsheng
Wertephy, Douglass
Willis, Christopher
Yabuuchi, Toshinori

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