

Agenda – Tuesday, March 8

Session 1: Overview of the NISP effort

8:30	NISP function, goals and FY16 deliverables	J. Frenje/S. Regan
8:45	Review/Summary of the 1 st NISP workshop	J. Frenje/S. Regan

Session 2: Model of the stagnated fuel and ablator/liner

9:00	Consolidated picture of the stagnated fuel (direct drive)	P. Radha
9:20	Consolidated picture of the stagnated fuel/ablator (indirect drive)	B. Spears
9:40	Consolidated picture of the stagnated fuel/liner (magnetic drive)	P. Knapp
10:00	Break	

Session 3: Fuel-bulk flows

10:15	Update on the nTOF workshop and peer-review analysis of nTOF measurements at OMEGA/NIF	J. Knauer
10:45	Dependence of Ti on target offset, adiabat etc...	J. Knauer
11:30	NIF nTOF diagnostic analysis update	G. Grim
12:15	Lunch	
13:15	Modeling update on non-radial flows at the NIF	B. Spears
14:00	Update on nTOF workshop – An SNL perspective	B. Jones
14:45	Break	
15:00	nTOF measurements at Z: Assessing impacts of flows, spatial variations and Magnetic Fields	P. Knapp
15:45	Developing simple physical descriptions of stagnation in the presence of non-radial flows	E. Yu
16:15	Day 1 wrap-up discussions	All

Agenda – Wednesday, March 9

Session 4: X-ray emission analysis/ Hot-spot shape vs Ti

8:30	X-ray emission size/shape analysis at LLE	F. Marshall
9:15	Shape vs Ti in perturbed gas-filled CH implosions	M. Gatu Johnson
10:00	Break	
10:15	3D modeling of image shapes and Ti variation	P. Radha
11:00	X-ray emission size/shape analysis at SNL	E. Harding
12:00	Lunch	
13:00	X-ray emission size/shape analysis at LLNL	S.Khan/R. Benedetti
13:45	X-ray shape vs Ti	N. Izumi
14:30	Break	
14:45	Workshop wrap-up discussions	All
16:00	Report out	All

FY16 NISP deliverables

- **Submit a document to NNSA by Sep. 30 (1st draft should be ready in June for “peer-review”). This document should include the following points for each approach:**
 1. Describe a “peer-reviewed”, distilled physical picture of the stagnated fuel and ablator/liner that’s consistent with most data.
 2. Define a list of “peer-reviewed” hypotheses for explaining discrepancies between experimental data and models.
 3. Define a list of new “peer-reviewed” diagnostics, experiments, and analyses methods needed to distinguish/refute the different hypotheses.

This effort will be based on input from the experts for each approach.

The NISP function and long-term goal

- **Our function is to “peer-review” the updates made to the document.**
- **This “peer-review” will be done through workshops that focus on either deliverable 1, 2 or 3.**
- **The document will be a living document, which illustrates the progress each approach has made.**
- **The end goal with this effort (in FY20) is to understand the physics-scaling to multi-MJ yields for the three approaches.**

Current thinking is to have the 3rd NISP workshop in Santa Fe the week of June 20 (in conjunction with the larger-scope workshop organized by Radha/Rochau/Haynes)

Summary and presentations from the 1st NISP workshop can be found on the PSFC-HEDP group's website



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NATIONAL IMPLOSION STAGNATION PHYSICS WORKSHOP (NISP) PROCEEDINGS

[Charter](#) for the National Implosion Stagnation Physics group

First NISP Workshop (27-28 October 2015, Livermore CA)

[Magnetically Driven Implosions and MagLIF \(27 October\)](#)

Kyle Peterson, et al.: "Introduction to Magnetically Driven Implosions and MagLIF".
 Mathew Gomez, et al.: "Diagnosing stagnation conditions in Magnetized Liner Inertial Fusion (MagLIF) Experiments".
 Patrick Knapp: "THE PHYSICS OF STAGNATION IN MAGNETICALLY DRIVEN IMPLOSIONS AT Z".

[Overview of direct-drive OMEGA cryogenic implosion results \(27 October\)](#)

Valeri Goncharov: "Overview of stagnation properties from direct-drive cryogenic OMEGA implosions".
 Sean Regan: "Hot-spot size".
 Sean Regan: "Confinement Time".
 Jim Knauer: "Ion temperature".
 Jim Knauer and Maria Gatun Johnson: "Areal density".

[Overview of indirect-drive implosion results \(28 October\)](#)

A. Pak, et al.: "Hot spot shape measurements for understanding stagnation in IDI".
 Brian K Spears: "Hot spot flows in the stagnation phase for the IDI platform".
 "Inferences of shell asymmetry in indirect drive experiments at NIF".

[A summary of the first NISP workshop](#)

List of action items from the 1st NISP workshop at LLNL on Oct. 27-28, 2015

1. Non-radial flow: emphasis on nTOF analysis, with peer review by LLE and LLNL. Sandia will look for precision requirements
2. X-ray emission analysis: compare images and resolutions at LLE and LLNL. Are the images different (smooth, lumpy). Sandia might offer a non-spherical analysis perspective
3. Compare consensus on image shapes and Ti variation. Shouldn't round images and isotropic temperatures go together?
4. Scrutinize and compare current analysis of the pressure.
5. Measurements of Te: Sandia, LLNL do nearly same differential filtration. Compare. Also compare to continuum spectrometry at LLE. Potentially develop a comparison with continuum and ross pairs at Omega
6. Cold fuel analysis: think about cold fuel, dark region and hot spot. Can we backlight the shell, compare to hot spot?
7. DD/DT yield ratios to understand scattering, species separation...
8. Compare Te and Ti to understand thermal/non-thermal contributions.