

# IWDP 2017

**PROGRAM**

**AND**

**ABSTRACTS**

Session 8

**9:00 : Wind tunnel tests of hydrogen-fueled detonation ramjet at Mach 4 to 8.** Frolov S. M.\* , Zvegintsev V.I.\*\* , Ivanov V.S.\* , Aksenov V.S.\* , Shamshin I.O.\* , Vnuchkov D.A.\*\* , Nalivaichenko D.G.\*\* , Berlin A.A.\* , Fomin V.M.\*\* , Sheplyuk A.N.\*\*; \*Semenov Institute of Chemical Physics, Moscow, Russia; \*\*ITAM SB RAS, Novosibirsk, Russia

Experimental studies of an axisymmetric hydrogen-fueled detonation ramjet model 1.05-m long and 0.31 m in diameter with an expanding annular combustor were performed in pulse wind tunnels "Transit-M" and AT-303 of ITAM SB RAS under conditions of approaching air stream Mach number ranging from 4 to 8 with the total temperature ranging from 290 K to 1400 K. In a supersonic air flow entering the combustor, continuous and longitudinally pulsating modes of hydrogen detonation with the corresponding characteristic frequencies of 1250 and 900 Hz were obtained. The maximum measured values of fuel-based specific impulse and total thrust were 3600 s and 2200 N.

**9:30 : RDE activities and projects in PPRIME Institute,** R. Zitoun, P. Vidal and S. Hansmetzger; Institut PPRIME, CNRS, ENSMA, Université de Poitiers, France

An overview of RDE activities at PPRIME is given. Fundamental studies relating to nonidealities problems in RDE are first presented. The experimental facilities for continuous rotating detonation are then described with focus on recent results and projects.