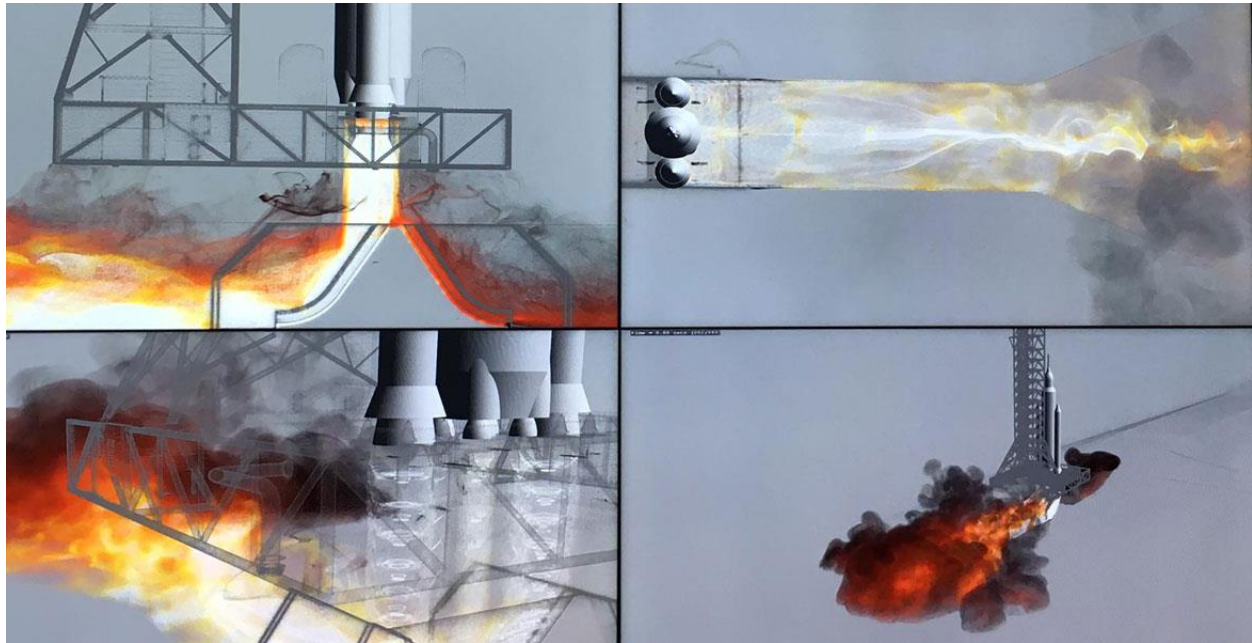


swissnex San Francisco and Space@yourService visits NASA Ames



Swiss Touch: To the Moon and Beyond – 50th Anniversary of the Humankind on the Moon was hosted last July 30 at swissnex San Francisco. Summer 2019 also marked the SciComm fellowship of Chloé Carrière, better known as “Galactic Chloé”, space enthusiast from EPFL / Swiss Institute of Technology. These two events led part of the swissnex team and Space@yourService to the NASA Ames Research Center in Mountain View for an entire day of space research discovery on September 6. On that day, we had the opportunity to learn about the Ames Research Center, Vertical Motion Simulators and its Intelligence Systems Division.

Did you know that the Mountain View based NASA Ames Research Center was named after Joseph Ames (1864–1943), a physicist and one of the founding members of the National Advisory Committee for Aeronautics (NACA), NASA’s predecessor? The research center was founded in 1939 as the second National Advisory Committee for Aeronautics (NACA) laboratory. In 1958, a newly created National Aeronautics and Space Administration (NASA) was created and the NACA was dissolved transferring its assets and personnel to the NASA. NASA Ames is operating over 600 hectares in Mountain View.

NASA Ames was initially founded to conduct wind-tunnel research on the aerodynamics of propeller-driven aircrafts, but has expanded to spaceflights and information technology. The Unitary Plan Wind Tunnel is NASA Ames’ research facility used to test NASA space vehicle and to design and test new generations of aircraft for both military and commercial. As wind tunnels are intended to study the flow of air around objects moving at speeds much faster than the local speed of sound and typically measure 30 by 40 meters, it takes the equivalent of the entire amount of Mountain View’s power to activate a wind-tunnel at NASA Ames.

Did you know that Astrobiology studies started at NASA Ames?

In the Space Science Building, we’ve learned about astrobiology and how NASA’s research data is key to the Federal Aviation Administration (FAA) in order to establish air traffic regulations, from drones to objects in low Earth orbit. Multi-spaceship vertical motion simulators are a core part of the research. While simulation is mainly being performed for NASA research purposes, other entities including the army, the industry and academia might benefit from the technology although not for training, except for astronauts. They’ve also recently started to work on the future lunar lander, part of the Artemis program to go back to the Moon.

We ended our NASA discovery at the Intelligent Systems Division where a few EPFL Phds and alumni are working for NASA on developing new technologies, as there is an increased interest to send robotic systems to the Moon. The primary purpose of having robotic systems in space is to create deep space habitat enabling to support crewed exploration Missions to the Moon, asteroids and Mars. During the visit, we had the opportunity to meet with the EPFL alumni working on several projects, including the Astrobee space robots and Super Ball Bot 2. While NASA has three Astrobees in the space station that have for main goal to be used to take care of space habitat, Super Ball Bot is an all-in-one landing and mobility platform based on tensegrity structures allowing for lower cost, due to its low weight, and more reliable planetary missions. It might be used for future Mars missions.