



The NASA Flight Dynamics Research Facility: Twenty-Five Years in the Making

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Virginia Air & Space Center
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The NASA Langley Intelligent Flight Systems (IFS) product line conducts research to enable safe systems with ever-increasing levels of automation and autonomy. Within the IFS portfolio are two wind tunnels with unique test capabilities: the 20-Foot Vertical Spin Tunnel and the 12-Foot Low Speed Tunnel. These facilities enable rapid evaluation of various aerospace concepts for aviation, human exploration, and science. NASA's newest wind tunnel, the Flight Dynamics Research Facility (FDRF), is currently being built at Langley and is scheduled to be operational in January 2025. FDRF will consolidate the capabilities of the two 80-plus year-old tunnels while providing significantly higher performance and adaptability for supporting future NASA missions. Mr. Fremaux will discuss the capabilities of FDRF, the current status of the project, planned research activities, and the path from the initial idea in the mid-90s to the project's inclusion in the 2020 NASA budget.

Charles M. (Mike) Fremaux is the Chief Engineer for Intelligent Flight Systems within the Research Directorate at NASA Langley Research Center, where he is responsible for ensuring technical excellence across a broad range of research and technology development activities focused on increasingly automated and autonomous systems. Previously, Mr. Fremaux worked in the Flight Dynamics Branch focused on experimental research and testing of high-performance military fighter aircraft, advanced commercial transport concepts, atmospheric entry vehicles for both human and robotic missions, and novel approaches for flight testing. Mr. Fremaux received his B.S. in petroleum engineering and M.S. in mechanical engineering from Louisiana State University, and the Engineer degree in aeronautics from The George Washington University.

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