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Sommario/riassunto	Water injection is one of the most promising technologies to improve the engine combustion efficiency, by mitigating knock occurrences and controlling exhaust gas temperature before turbine. As result, the engine can operate at stoichiometric conditions over the whole engine map, even during the more power-demanding RDE cycles. Antonino Vacca presents a methodology to study and optimize the effect of water injection for gasoline engines by investigating different engine layouts and injection strategies through the set-up of a 3D-CFD virtual test bench. He investigates indirect and direct water injection strategies to increase the engine knock limit and to reduce exhaust gas temperature for several operating points. Contents Influence of Water Vapour on Flame Speed and Auto-Ignition Optimization of the Water Injector Targeting Mixture Formation Induced by Water Injection Water Injection in Combination with Miller Cycle Target Groups Researchers and students in the field of automotive engineering Automotive engineers About the Author Antonino Vacca obtained a PhD at the research Institute of Automotive Engineering (IFS), University of

Stuttgart and he is currently project leader at FKFS (Stuttgart, Germany) responsible for the development of innovative combustion concepts for gasoline and gas engines.

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