# Object-Oriented Multivariate Proportional-Integral-Derivative Control of Hydraulic Systems

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**Abstract :** This paper presents and discusses the application of the object-oriented modelling software SIMSCAPE to hydraulic systems, with particular reference to multivariable proportional-integral-derivative (PID) control. As a result, a particular modelling approach of a double cylinder-piston coupled system is proposed and motivated, and the SIMULINK based PID tuning tool has also been used to select the proper controller parameters. The paper demonstrates the usefulness of the object-oriented approach when both physical modelling and control are tackled.