# Space Shuttle Main Engine: fuel and tank analysis

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## Contents

# 1 Introduction

The Space shuttle propulsion system consists of three space shuttle main engines (SSME) which draws liquid oxigen ($LO_2$) and liquid hydrogen ($LH_2$) from the external tank (ET). On the sides of the ET two solid rocket boosters are attached. To control the attitude of the orbiter, once it has reached space, two orbital manouvering system (OMS) engines and 44 reaction control systems (RCS) thrusters are used. The following is an analysis of the SSME's thermodynamic cycle and how the propulsive properties change when another fuel is used instead of $LH_2$.