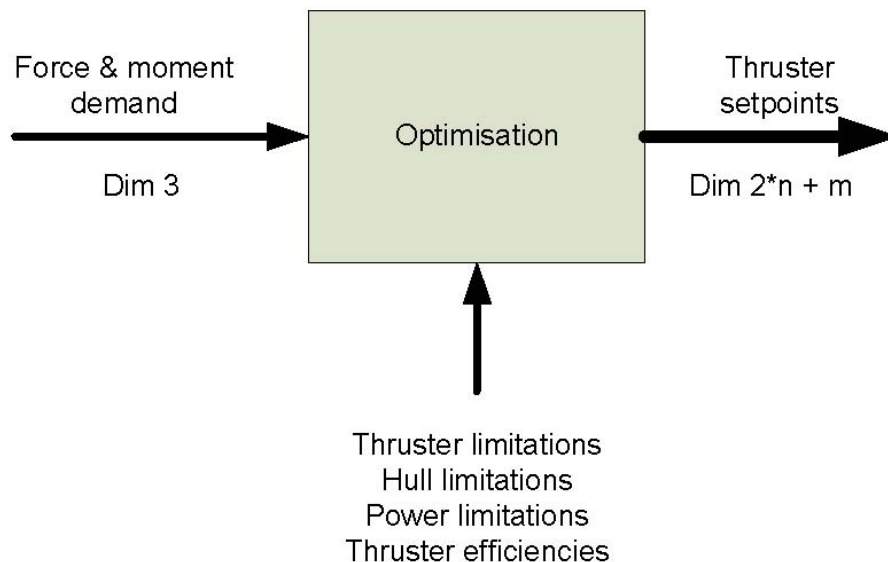


Power Optimal Thruster Allocation

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Abstract

The thruster allocation is a complex mapping from a demanded force and turning moment to a set of thruster pitch/ rpm and azimuth setpoints. Since the number of degrees of freedom of thruster controls is normally very high, there exist many such mappings.



In addition the mapping must handle thruster limitations in terms of max and/or min values, permissible azimuth sectors and available switchboard power. The algorithms should also take into account the efficiency of each thruster. This is of special importance for azimuth thrusters, which may have degraded efficiency within certain sectors. The clue is to design the most optimal mapping in some sense. In this paper the power aspects are dealt with.

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