命令模式

TORque [/LIM] [/FRAme] [/THIN] [/PROfile | /PLAN]
[/NOPRINT] [/NOTable[:PLOT [ONLY]]] [/PLOT:LINear | OFF] [/NOSOLVE]

Computes and displays twisting torque due to weight and buoyancy for the current condition (requires the LS module).

计算并显示当前浮态下船舶自身重量和所受的浮力导致的扭矩（需要 LS 模块）。

参数说明

/LIM

Causes limits defined through the LSLIM TOR command to be respected.

考虑命令 LSLIM TOR 定义的扭矩许用值。

/FRAME

Causes frame descriptions to appear in the table, showing results just at prescribed locations.

在表格中显示肋位位置说明，并显示此位置的结果。

/THIN

Causes extra "thinning" of points in the output table.

在输出结果中包括在沿薄壁剖面指定点处的扭矩值。

/PROFILE | /PLAN

Includes the vessel profile or plan on plots.

在结果报告中显示船舶外形或平面。

/NOPRINT

Omits the report output, instead setting certain variables.

省略报告输出，而不是设定某些变量。

/NOTABLE [:PLOT[ONLY]]

Prevents the tabular data from being displayed. Plots are omitted unless PLOT subparameter is included. The summary is shown unless PLOTONLY is used.

防止显示表格数据。除非包含 PLOT 子参数，否则省略绘图。除非使用“仅 PLOT”，否则将显示摘要。

/PLOT: LINEAR

Causes the plots to use straight lines between points for all curves.

使图在所有曲线的点之间使用直线。

/PLOT OFF

Omits the plots.

省略绘图。

/NOSOLVE

Uses the current waterplane without solving.

使用当前水平面而不求解。

Operation

操作

TORQUE makes use of the weight density curves provided via the WEIGHT and ADD commands and the current tank loading and wave configuration. Multiplying by the transverse arms of weight and buoyancy, it computes values of torque along the length of the vessel.

TORQUE 利用通过命令 WEIGHT，ADD 和装载工况得到的重量密度曲线及波浪。在全船长度范围内，通过重力和浮力对横向力臂的乘积计算扭矩。

The first thing that TORQUE does is find the equilibrium draft and trim (and heel if it is not fixed). Once this is achieved, it gets the detailed buoyancy moment data on all displacer components and puts together a composite buoyancy moment density curve.

首先要找到吃水和纵倾的平衡点（如果不锁定横倾，也要找到横倾平衡点）。一旦找到平衡点，会得到所有浮体的浮力力矩合成后的力矩密度曲线。

A similar process produces a composite weight moment curve from the weight and tank loading data. Tank property tables are ignored.

通过相同方法，得到船舶自重和装载重量的重量合力矩密度曲线，忽略舱室属性列表。

In each transverse plane, the arms for these moments are taken about the line passing through the overall center of buoyancy (projected into that plane) and perpendicuar to the nominal waterplane. When in equilibrium, this line also passes through the overall center of gravity.

在每一个横剖面上，其力矩的力臂是投影于该剖面通过浮心并垂直于水线面的直线。如果是平衡的，该直线也通过全船的中心。

Both weight and buoyancy moment curves are then multiplied by the cosine of the trim angle. This results in a reduction which will be noticed particularly on point weights when there is a substantial amount of trim. The two curves are then subtracted to produce a net torque density curve.

重量和浮力力矩曲线都乘以纵倾角度的余弦。当纵倾角较大时，还要减去由点载荷处产生的力矩。重量和浮力曲线相减即为净扭矩密度曲线。

An integration of the net torque density curve produces the torque curve.

对净扭矩密度曲线积分得到扭矩分布曲线。

Finally, a linear correction factor as a function of longitudinal location is applied to the torque curve in order to ensure that it goes to zero at both ends.

最后，利用纵向位置线性修正函数去校正扭矩曲线以确保在曲线的两端扭矩为 0。

The /FRAME parameter causes the torque data to be shown only at locations described in the frame data (see LS command for more details).

参数/FRAME 只显示肋位位置处的扭矩（更多详细信息查看命令 LS）。

Torque limits can be defined through the LSLIM command.

扭矩许用值可以通过命令 LSLIM 定义。

A full tabular listing (at each longitudinal location for which it is computed) is shown on the output, followed by a summary giving the maximum torque value. The /NOTABLE parameter has the effect of omitting the table and showing only the summary information.

在输出中会列表显示每一纵向位置上的扭矩值，下面会显示最大扭矩值。参数/NOTABLE 可以使显示省略列表，只给出最大扭矩值。

Display Output

显示输出

TORQUE displays a table with columns for longitudinal location, weight moment density, buoyancy moment density and integrated torque, along with optional frames and limit results.

命令 TORQUE 会生成结果表格，包含纵向位置，重量矩密度，浮力矩密度和积分扭矩，肋位信息和许用值。

In the weight column, point weights are indicated by an asterisk. Other weights are actually weight moment densities (weight times length per unit length).

在重量列中，点载荷是用星号*表示的。其余重量均为重量密度（重量乘以每单位长度）。

Some of the points on the weight and buoyancy curves that were used in the calculations may be omitted from the table if they are redundant or very close together or if they do not represent significant changes in the curves. Even more of this "thinning" will take place if the /THIN parameter is used.

在重量和浮力曲线上，如果在计算中应用到的点太多、太密集或在曲线上不代表重要的变化，那么在表格显示中将忽略这些点。如果参数/THIN 存在，扭矩沿薄壁的分布也会显示出来。

The summary presents maximum (absolute) torque. The location at which the maximum occurs is also given.

总结显示最大扭矩（包括+/-）。最大扭矩出现的位置也会显示出来。

Nondisplay Output

无显示输出

A table is defined which includes columns for location, weight, buoyancy and torque.

定义包含位置，重量，浮力和扭矩信息的表格。

Units are the same as in the display output.

在输出显示中单位相同。

Output to User Variables

输出到用户变量。

When both /NOPRINT and /FRAME parameters are present, certain user variables, if such variables exist, receive the shear and bending results. The variable names must begin with frame descriptions as represented in the frame data, and one of the following must be appended to these descriptions:

当同时附加参数/NOPRINT and /FRAME 时，如果存在接受剪力和弯矩结果的变量。变量名称形式必须为肋位名称加下面一种后缀：

Variable Suffix 变量后缀	**Meaning** 代表意思
$TM	Torque moment at this frame 此肋位的扭矩。
$TQ	Torque fraction of limit at this frame 此肋位的扭矩占许用值的%
$LOC	Longitudinal location of this frame 此肋位位置。

For example, the variable named FR35$TM would receive the torque moment value at the location described by "FR35" in the frame data.

例如，变量名 FR35$TM 可以接收 FR35 位置的扭矩值。

Examples

样例

Longitudinal strength table and summary:

总纵强度列表和总结：

TORQUE

Omitting the table:

省略表格：

TORQUE /NOTAB