

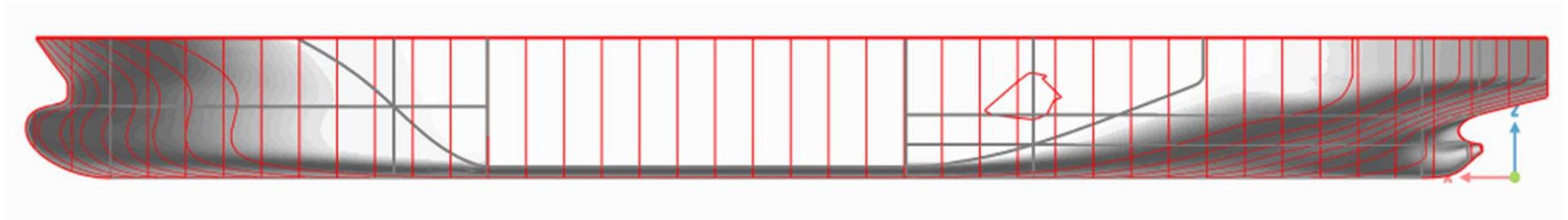


CAESES 5.0 船体新建模和变形方法

张永兴 2023年5月25日

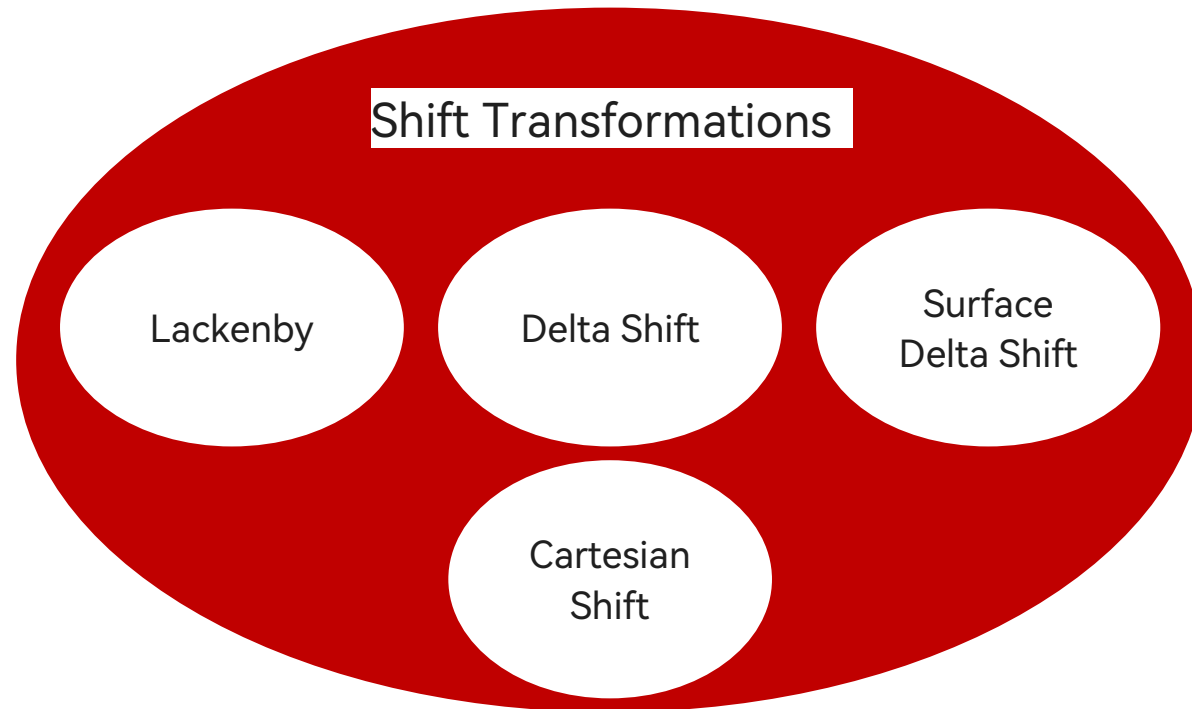
概述

灵活利用Delta Shift方法，自定义15个Feature，实现复杂的船体变型：



Delta Shift方法简介

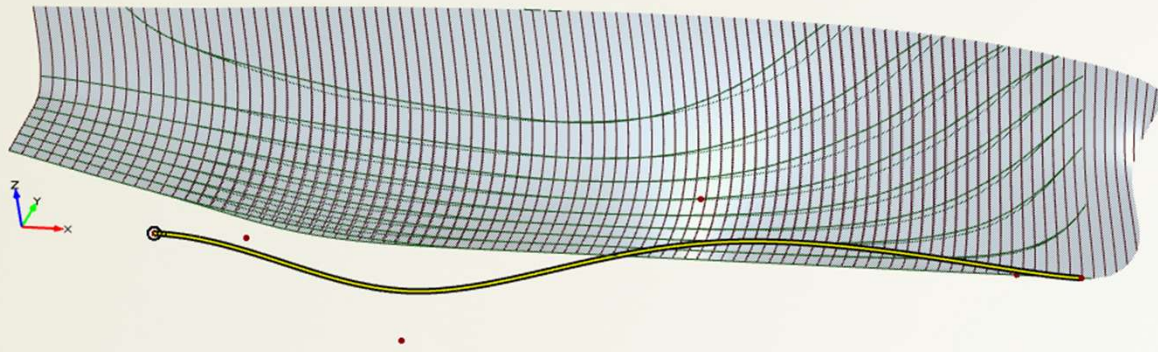
CAESES提供的Shift Transformations 是通过沿X、Y、Z轴方向对几何进行变形。



Delta Shift方法简介

Delta Shift

变形的作用位置和大小信息由一根曲线提供。



deltaShift1

GENERAL		
Delta X	<input type="checkbox"/>	?
Delta Y	<input checked="" type="checkbox"/>	?
Delta Z	<input type="checkbox"/>	?
Factor	1	?
Deltacurve*		?

General:定义对模型产生影响的方向

DELTACURVE ABSCISSA		
X	<input checked="" type="checkbox"/>	?
Y	<input type="checkbox"/>	?
Z	<input type="checkbox"/>	?

Abcissa:用于定位对模型产生影响的位置

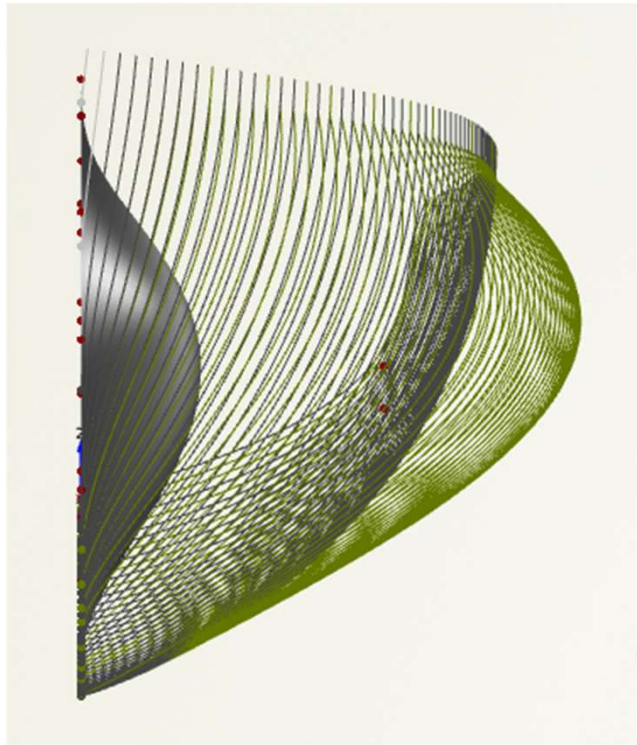
DELTACURVE ORDINATE		
X	<input type="checkbox"/>	?
Y	<input checked="" type="checkbox"/>	?
Z	<input type="checkbox"/>	?

Ordinate:提供对模型产生变形的量

Delta Shift方法简介

Surface Delta Shift

变形的作用位置和大小信息由一个曲面提供



surfaceDeltaShift1

GENERAL

Delta X **General:定义对模型产生影响的方向** ?

Delta Y ?

Delta Z ?

Factor 1 ?

Delta Surface* ?

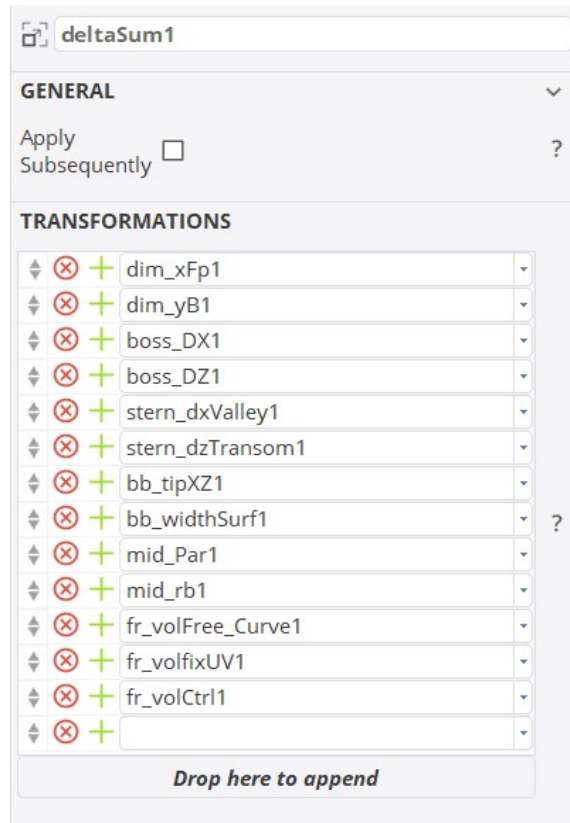
Coordinate Y ?

Ordinate:提供对模型产生变形的数据

Delta Shift方法简介

Delta Sum

把几个Shift Transformation加在一起，然后作用在几何上。

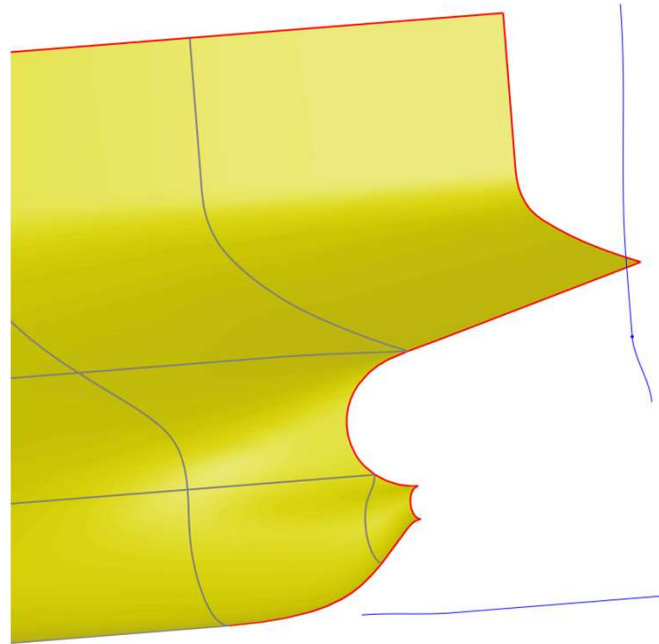


可以是Lackenby, delta shift, surface delta shift, Cartesian Shift

Delta Shift方法简介

Delta Product

把几个Shift Transformation的值相乘，然后作用在几何上。

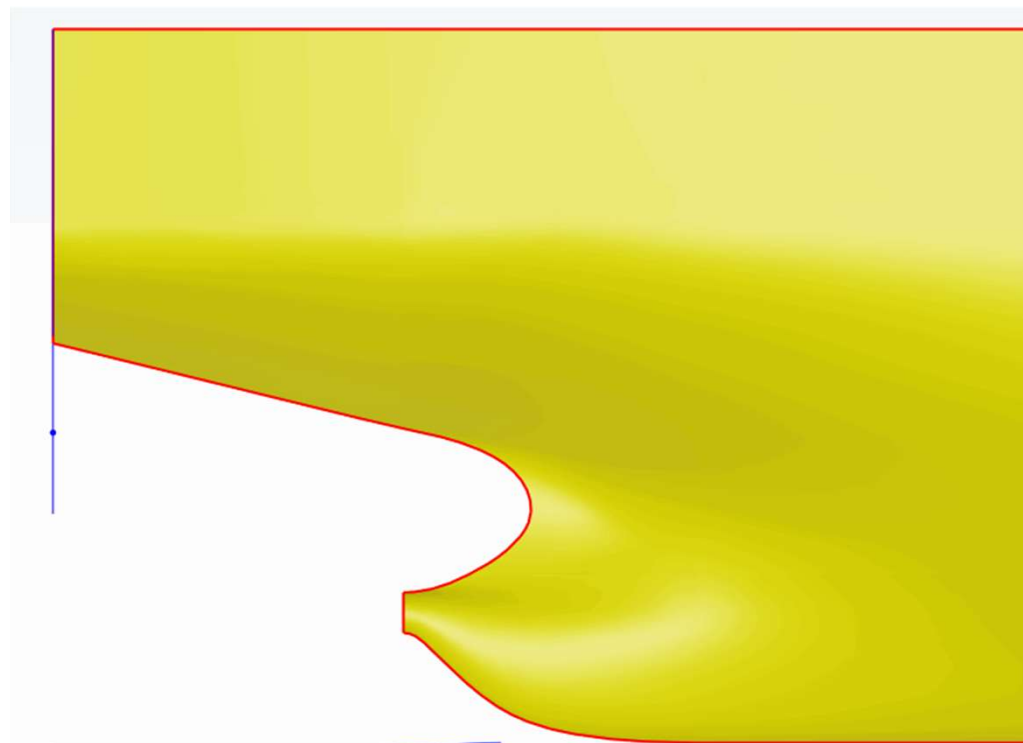
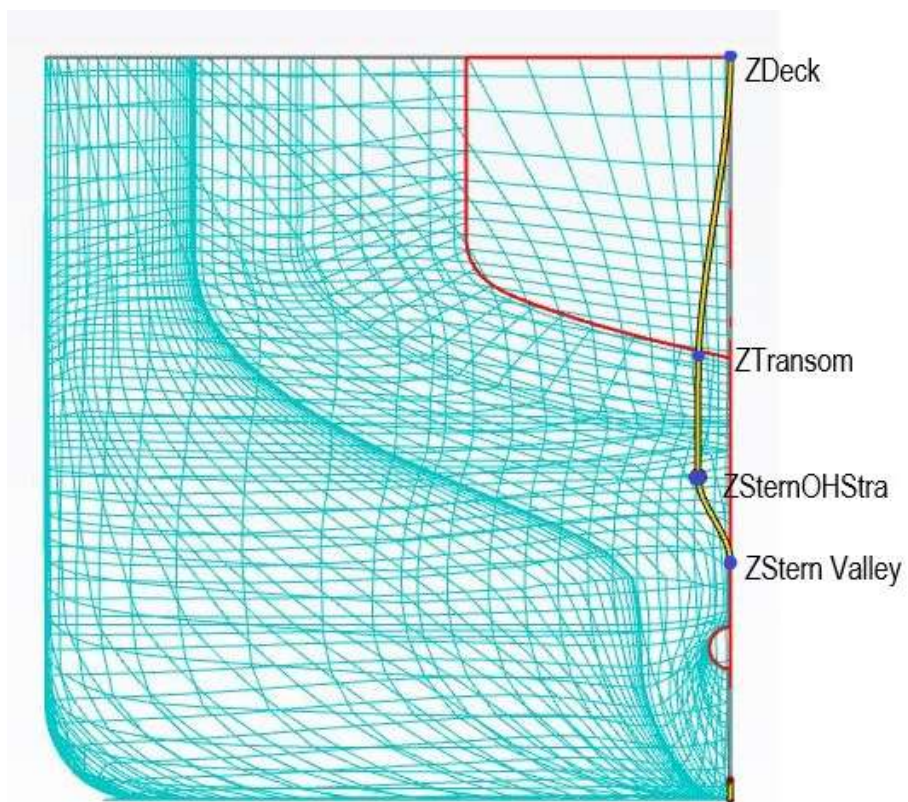


1. 需要保持几何某部分不变形时
2. 需要在曲面进行三维灵活控制时

请打开算例文件start.cdb

stern_dzTransom1

改变尾部高度



stern_dzTransom1

改变尾部高度

stern_dzTransom1

GENERAL

Is Visible

X VALUES

XTransom -5.3
|03_Parameters|xTransom

XStemOH 4.884
Straight End |03_Parameters|xStemStraight

XEnd 9.1461
|03_Parameters|xStemValley

Z VALUES

ZTransom 13.079
|03_Parameters|zTransom

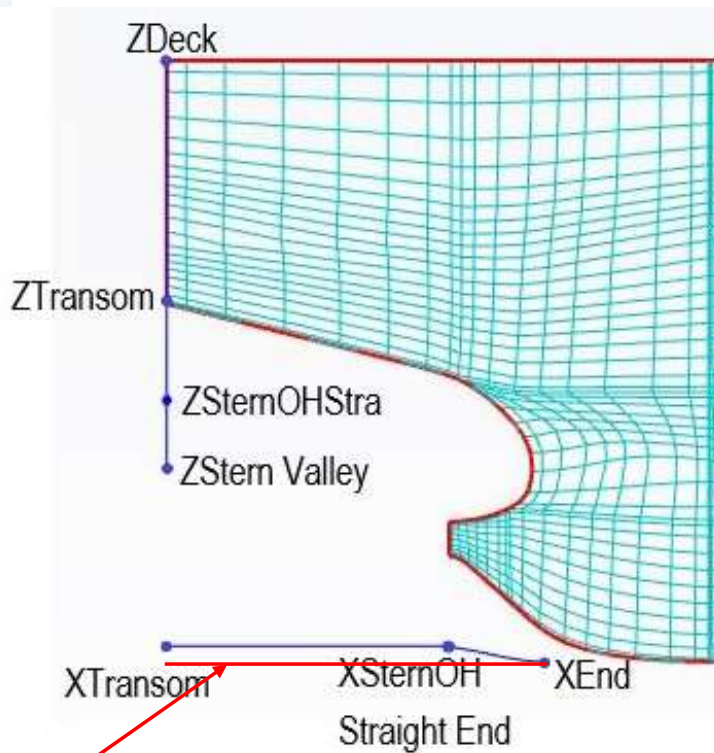
ZDeck 23
|03_Parameters|zDeck

ZStem Valley 7.3804
|03_Parameters|zStemValley

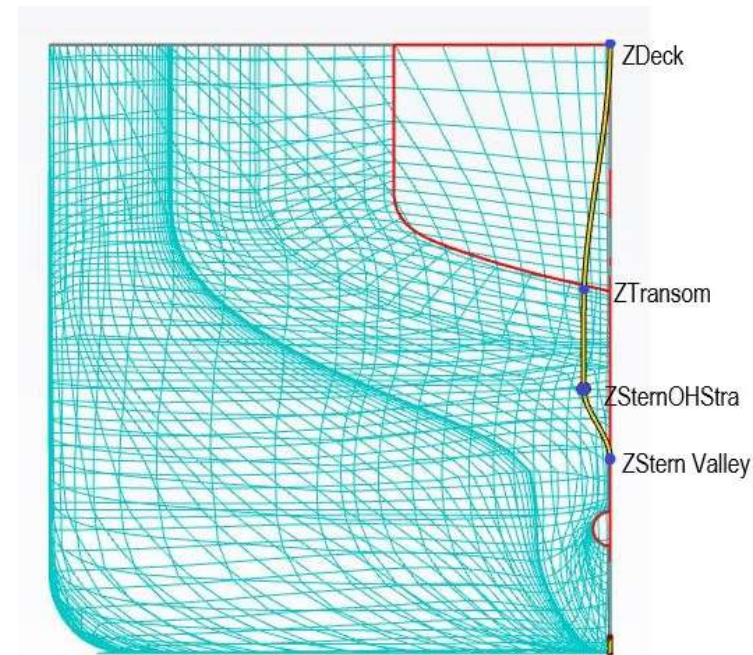
zStemOHStra 10

VARIABLE

Dz Transom 0
design_variables|
dv_stern_dzTransom1_Dz_Transom ?

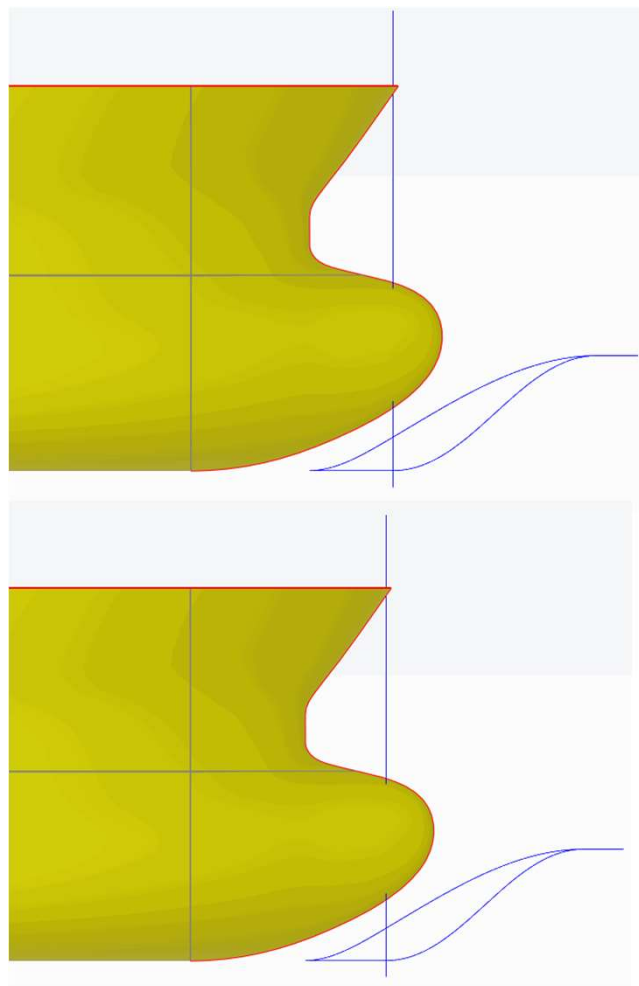
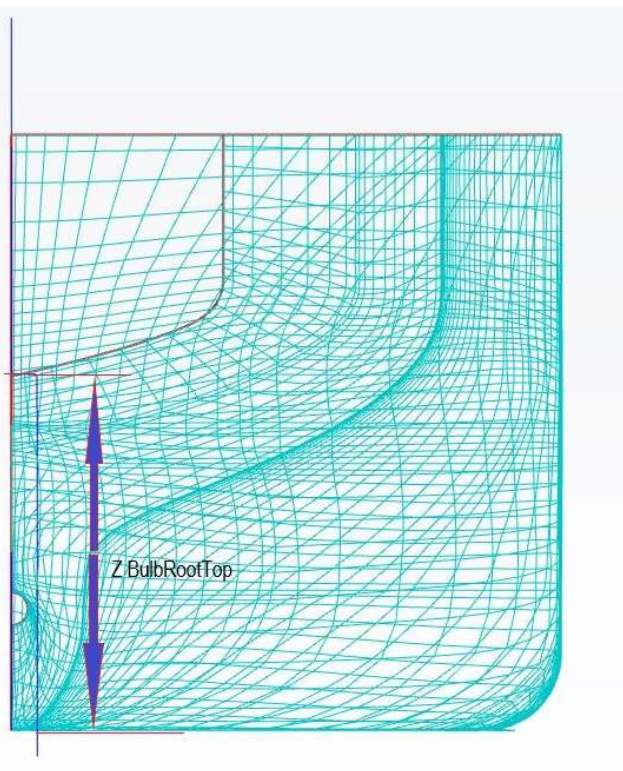


Dz Transom



bb_tipXZ1

改变球鼻艏的长度、高度



bb_tipXZ1

改变球鼻艏的长度、高度

bb_tipXZ1

GENERAL

Functions Visible

POSITIONS

X Start: 239
|03_Parameters|xFp

X Bulb Beak: 244
|03_Parameters|xBulbBeak

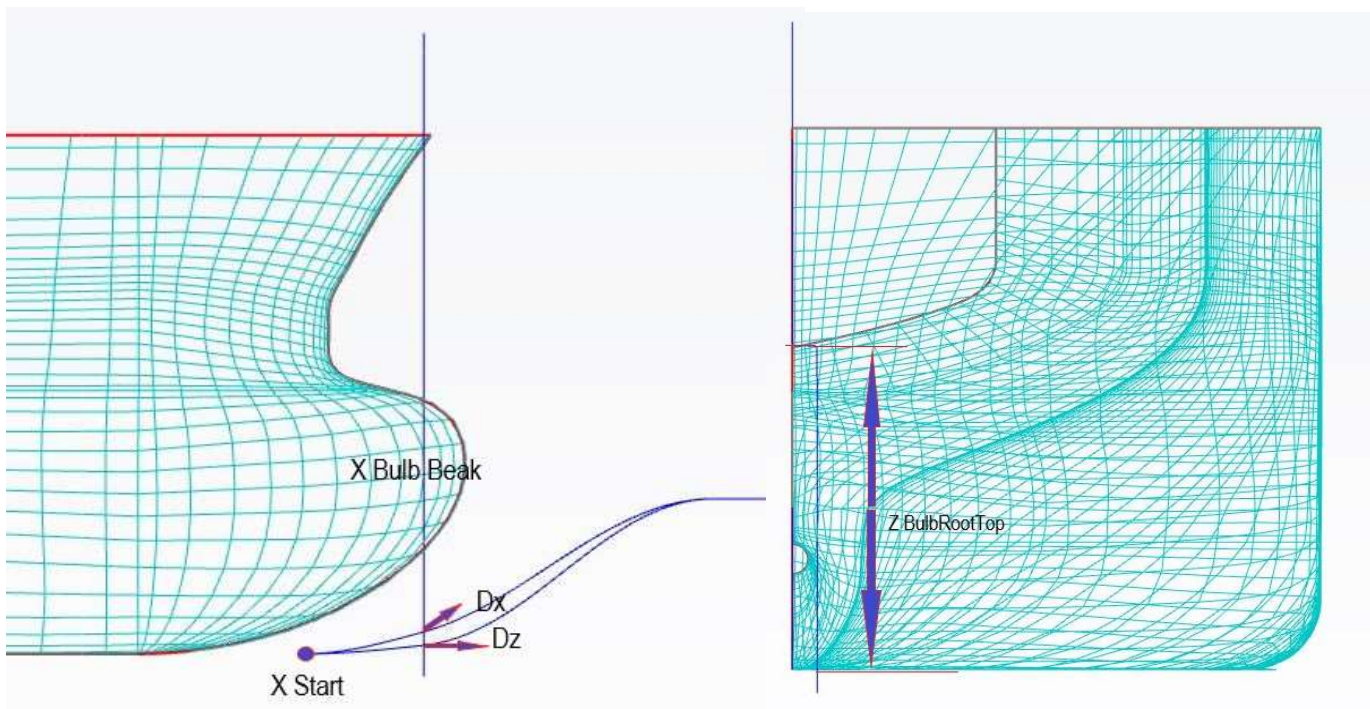
Z BulbRootTop: 13.756
|03_Parameters|zBulbRootTop

SHIFT VALUES

Dx: 0
design_variables|dv_bb_tipXZ1_Dx

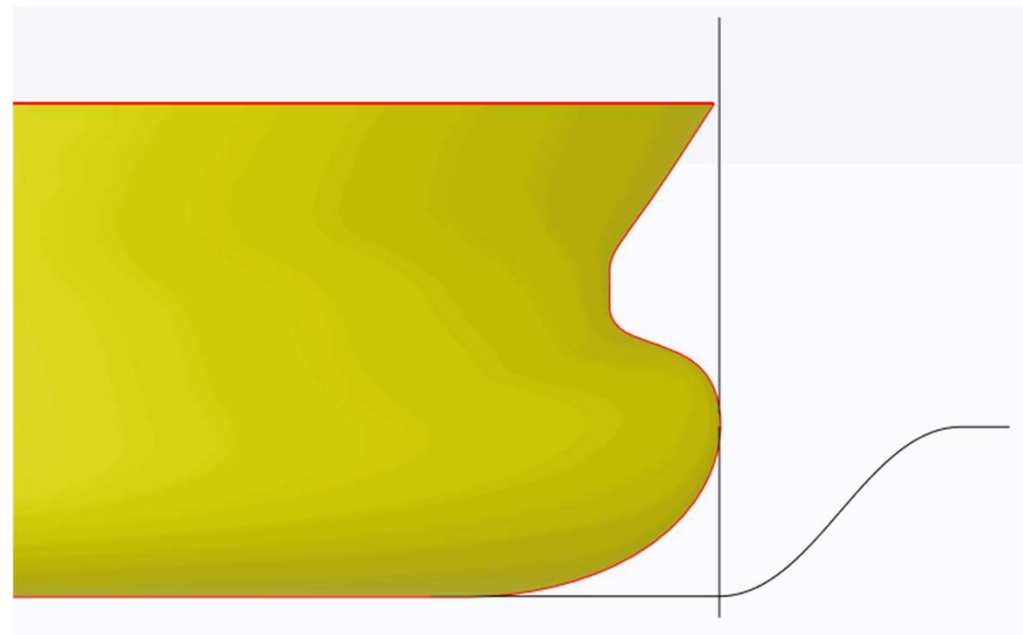
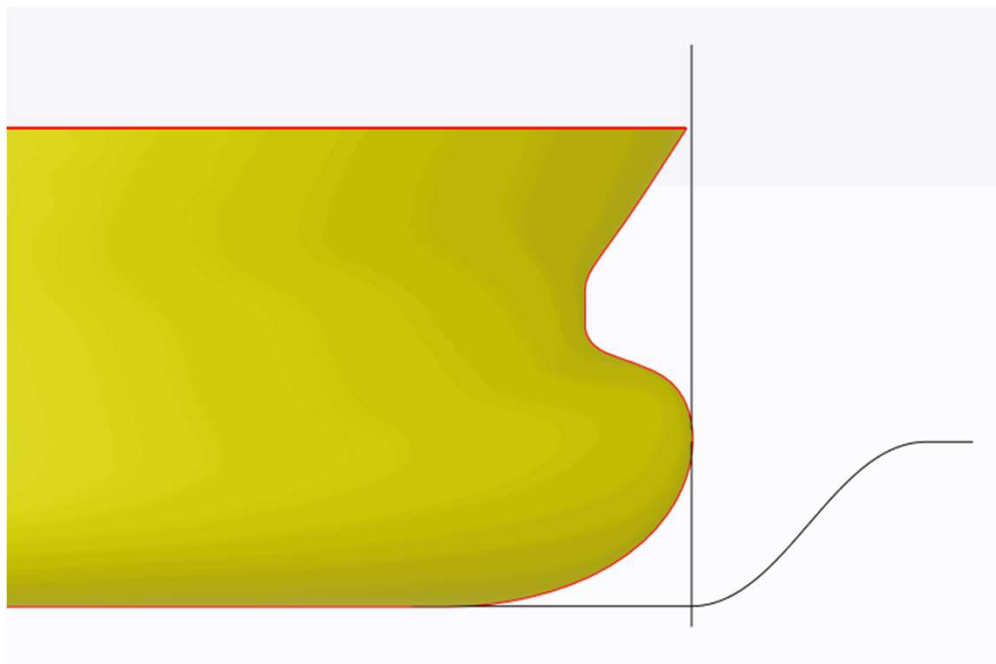
Dz: 0
design_variables|dv_bb_tipXZ1_Dz

DISPLAY OPTIONS



bb_profile1

改变球鼻艏轮廓



bb_profile1

改变球鼻艏轮廓

bb_profile1

GENERAL

Is Visible

PROFILE CURVE

Upp Prof |01_Import|boundaryCurves|sc1|bulb_profile_up| ?

Low Prof |01_Import|boundaryCurves|sc1|bulb_profile_lo| ?

POSITIONS

Z BulbRootTop 13.5 ?

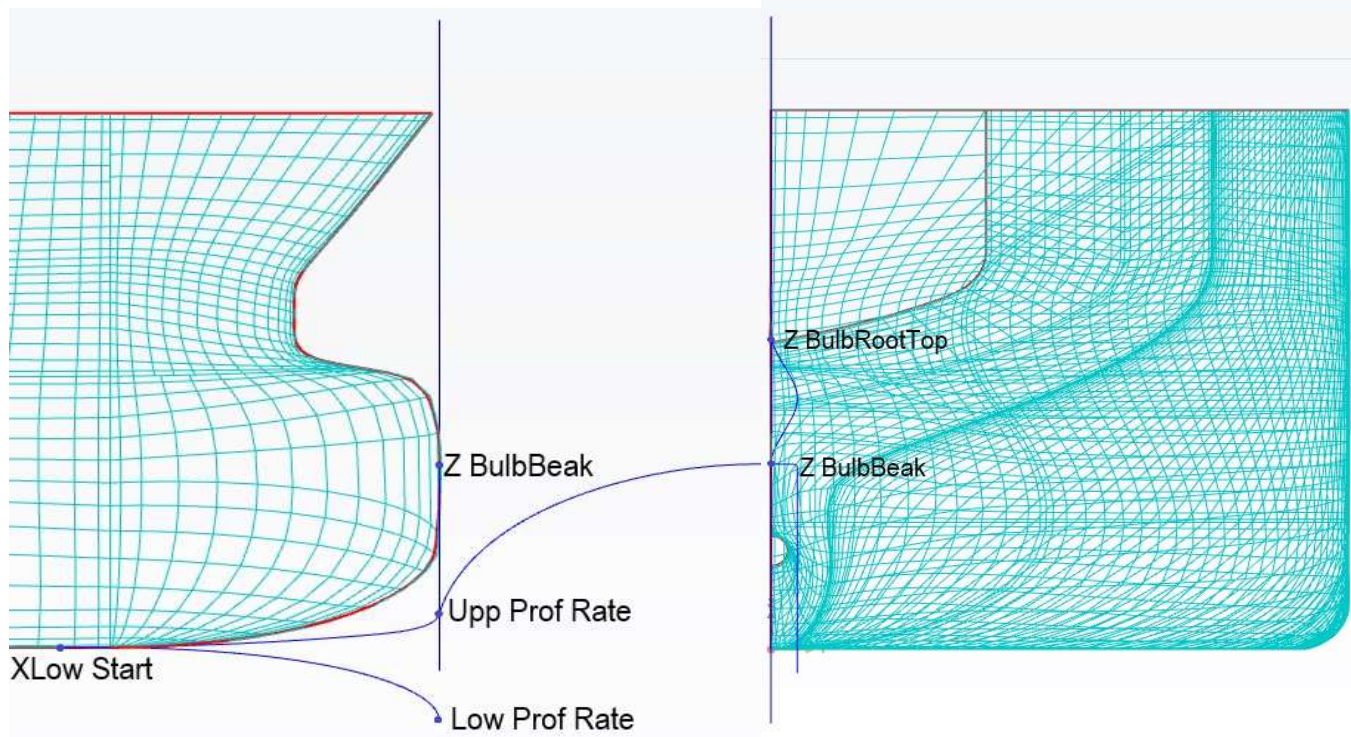
Z BulbBeak 7.9 ?

XLow Start 230 ?

SHIFT VALUES

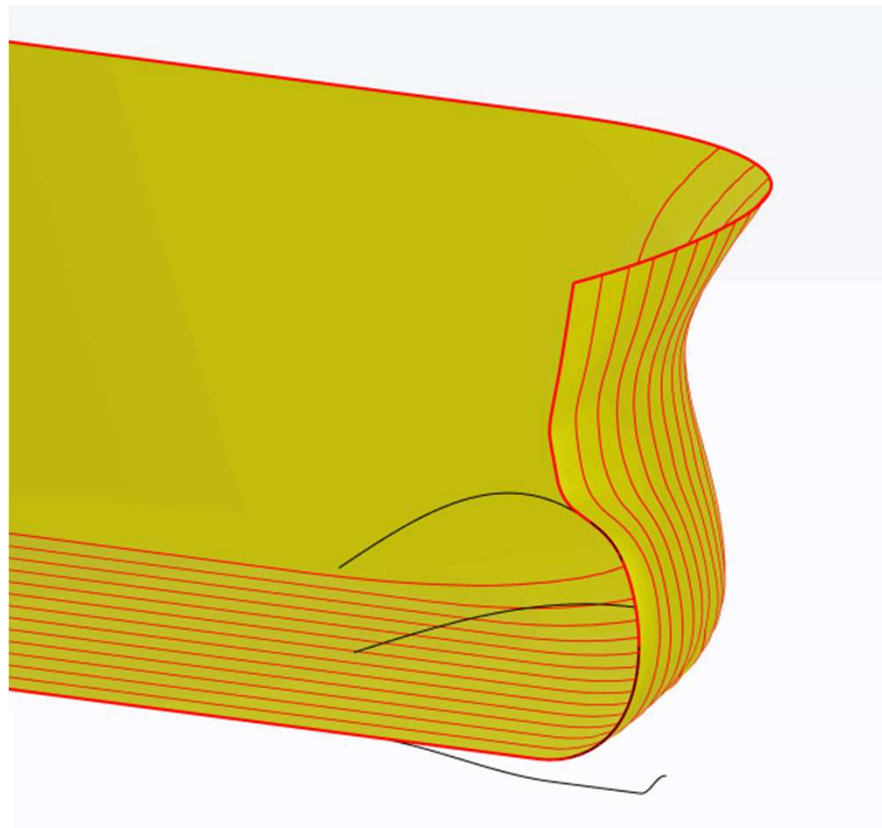
Low Prof Rate (No Change 1) 0.6 ?
design_variables|dv_bb_profile1_Low_Prof_Rate

Upp Prof Rate (No Change 0) 0 ?
design_variables|dv_bb_profile1_Upp_Prof_Rate



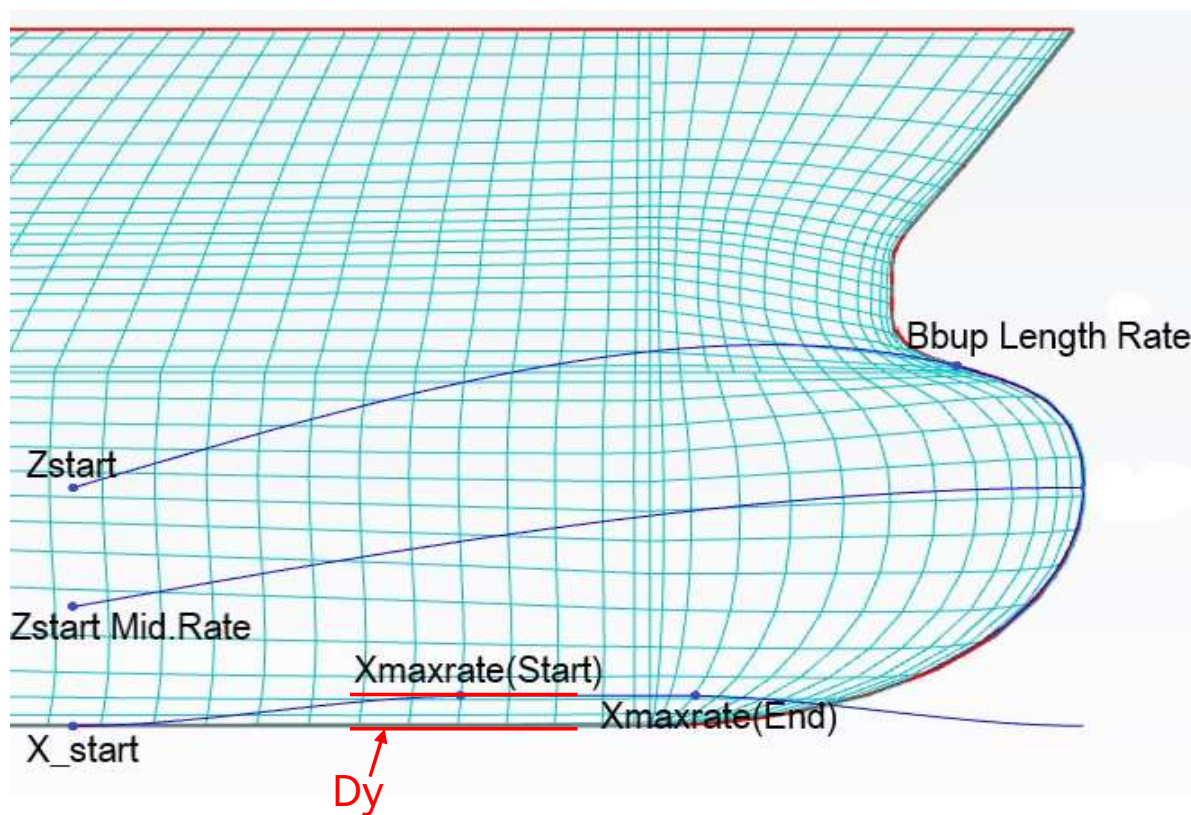
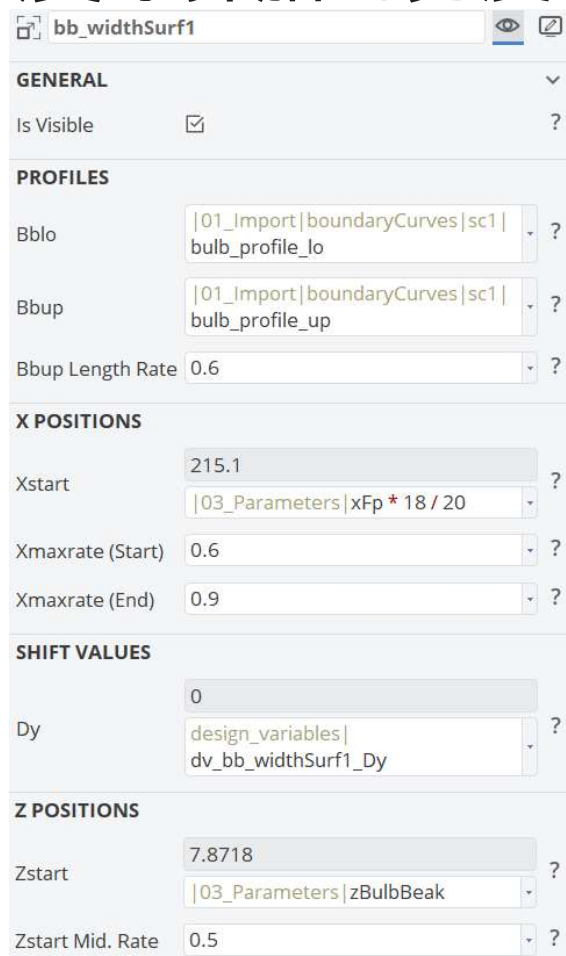
bb_width_surface1

改变球鼻艏的宽度



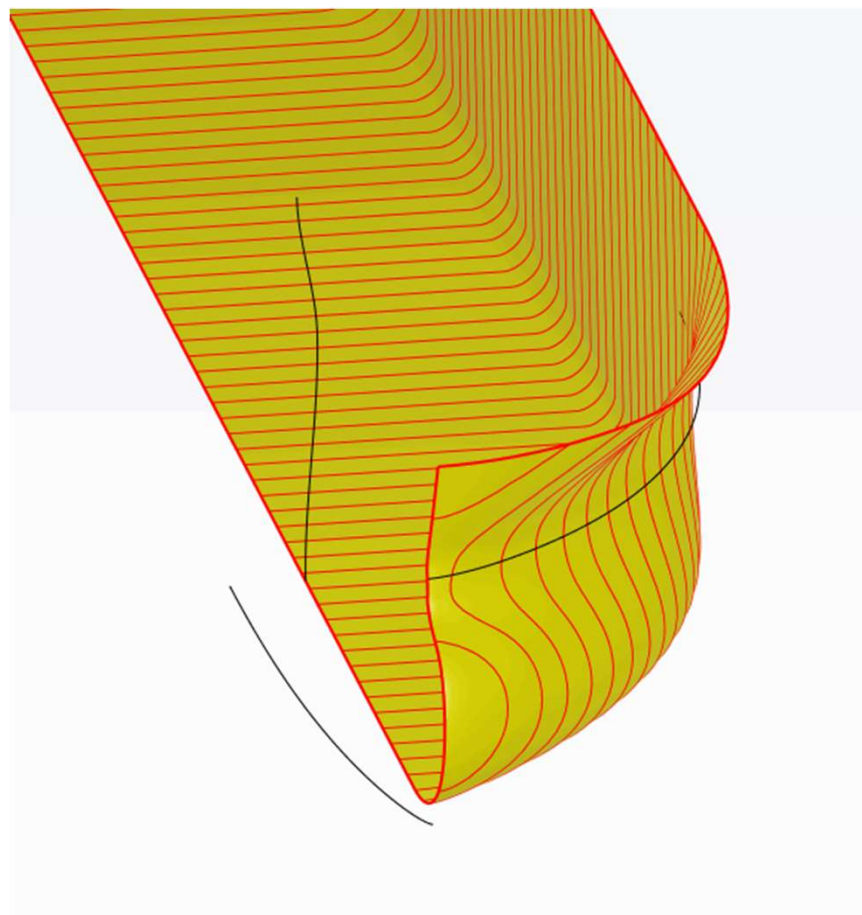
bb_width_surface1

改变球鼻艏的宽度



entranceVari1

改变Dwl入流段型线



entranceVari1

改变Dwl入流段型线

entranceVari1

GENERAL

is Visible

CURVE

Dwl Ori |01_Import|boundaryCurves|sc1|Dwl

X VALUES

XStart 190

XEnd(xFp) 239

VARIABLE

Dy Rate 0.8

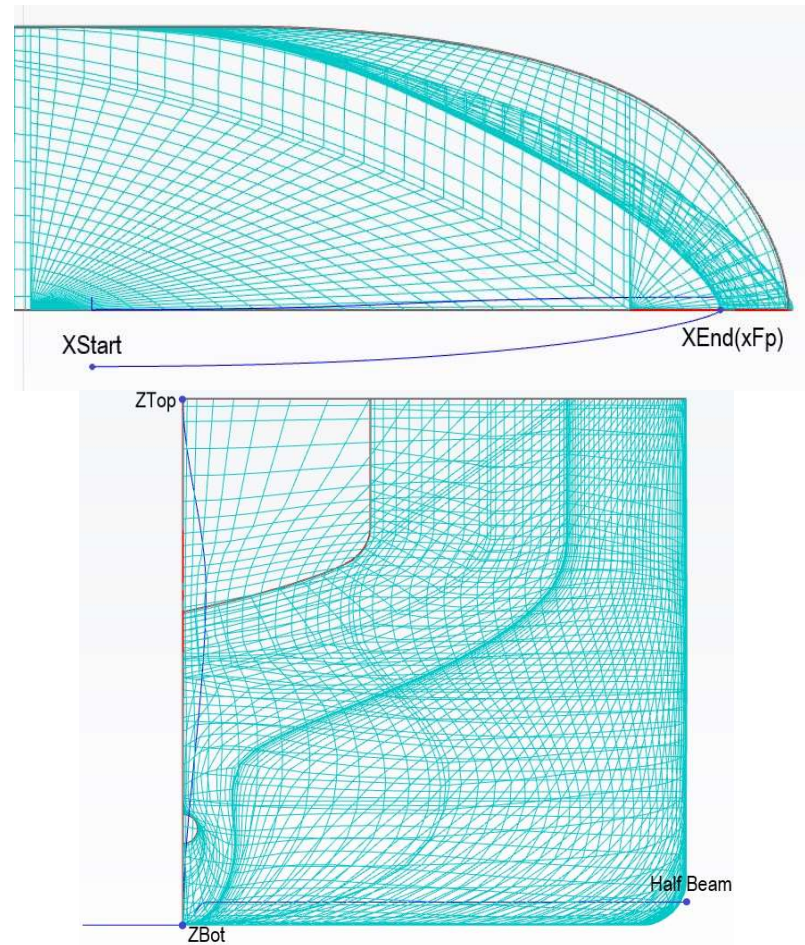
Z VALUES

ZBot 0

ZTop 23

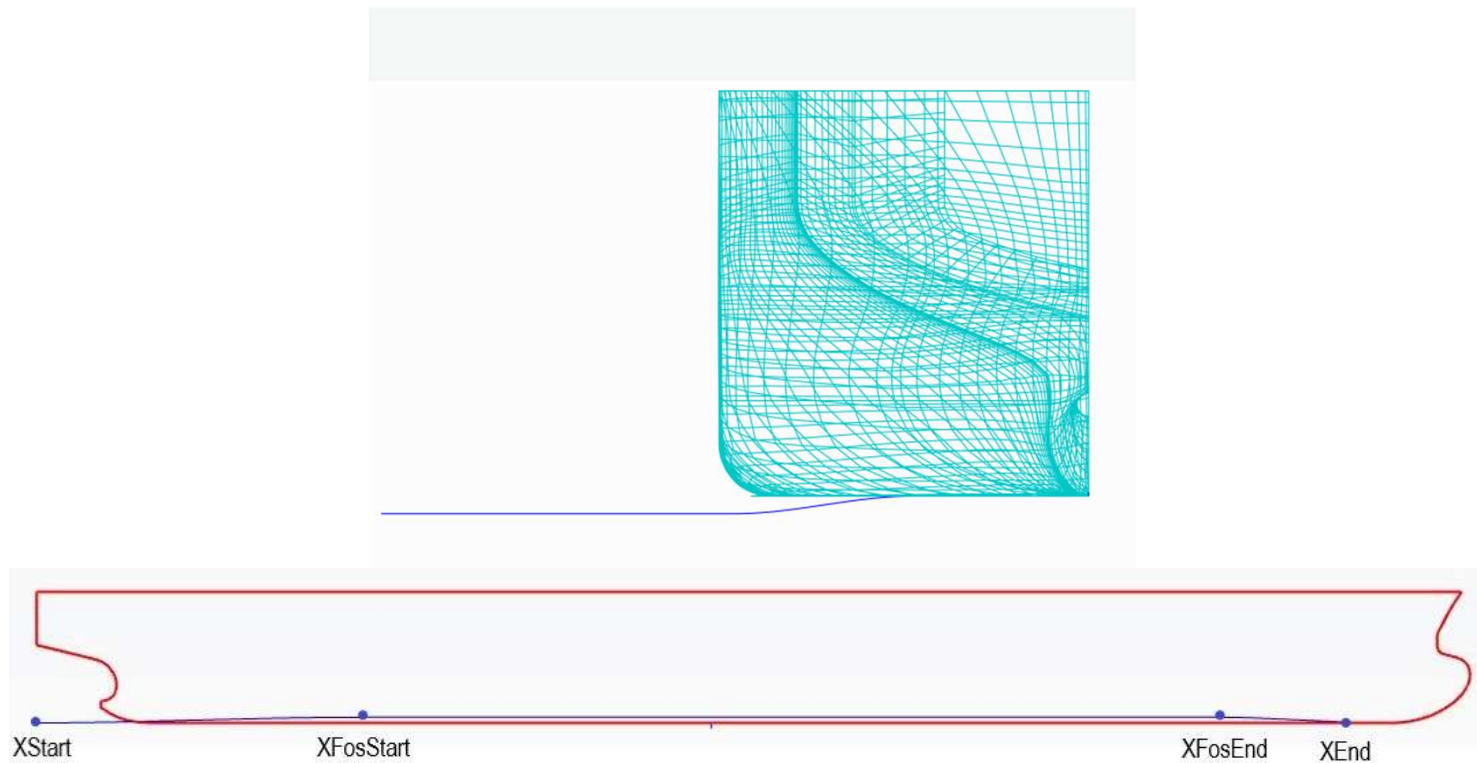
Y VALUES

Half Beam 22



dim_YB1

改变船宽



dim_YB1

改变船宽

dim_yB1

GENERAL

Is Visible

Y VALUES

YFob 20.1
|03_Parameters|yFobMax

YZero Rate 0.5

VARIABLE

Dy -1
design_variables|dv_dim_yB1_Dy

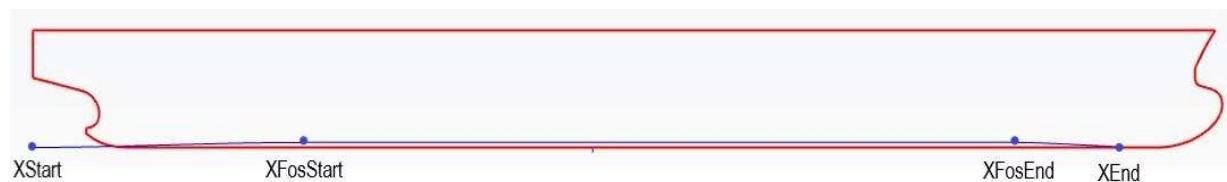
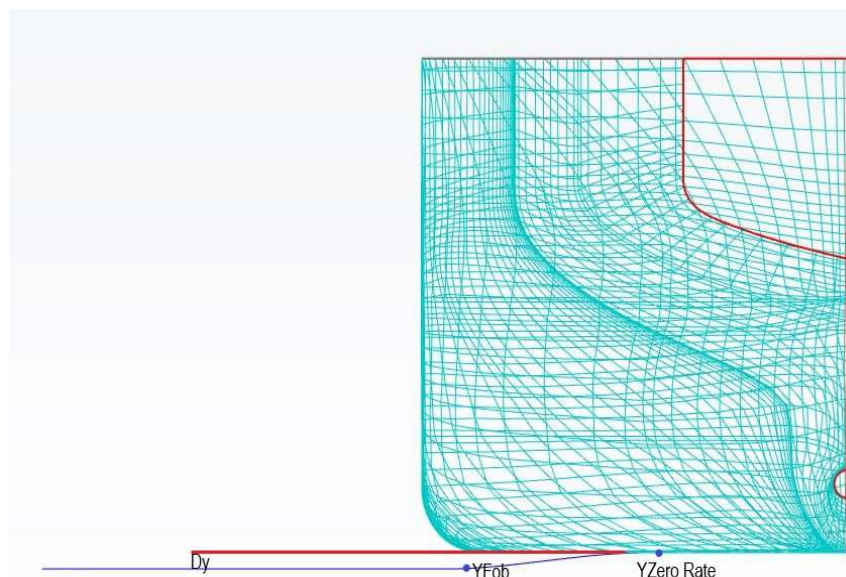
X VALUES

XStart -5.3
|03_Parameters|xTransom

XEnd 231
|03_Parameters|xFobBeak

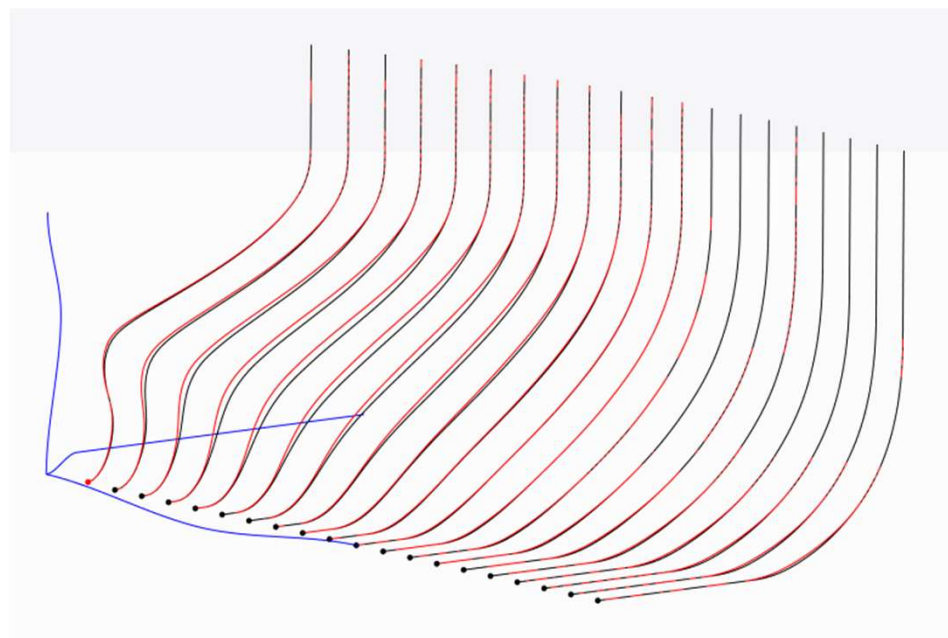
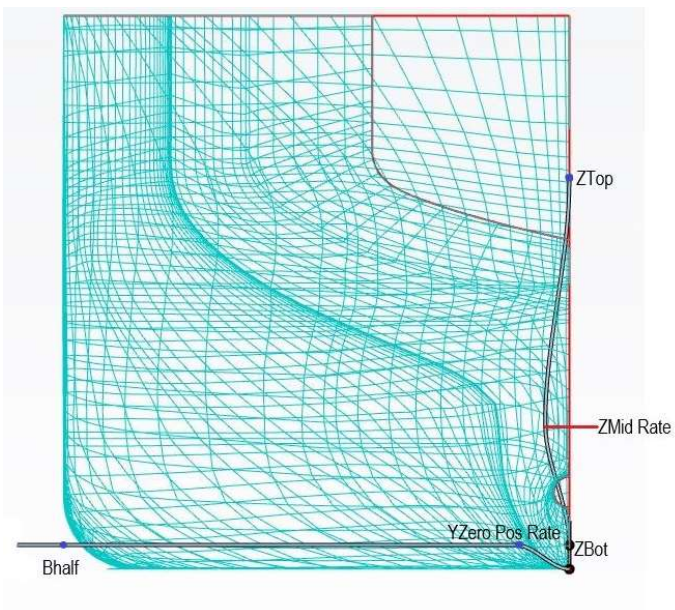
XFosStart 51.478

XFosEnd 201.318



fr_volFree_Curve1

通过控制dy改变尾部丰满度



fr_volFree_Curve1

通过控制dy改变尾部丰满度

fr_volFree_Curve1

GENERAL

Is Visible

X VALUES

XStart 9.1461

XEnd 46

XMax Rate 0.5

Z VALUES

ZMid Rate 0.4

ZTop 14.7

ZBot 1

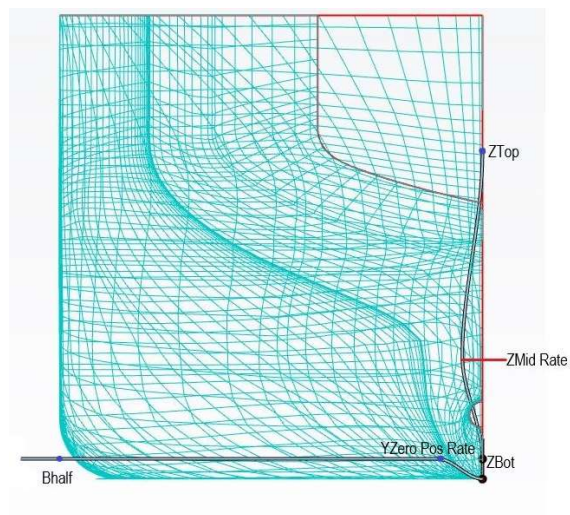
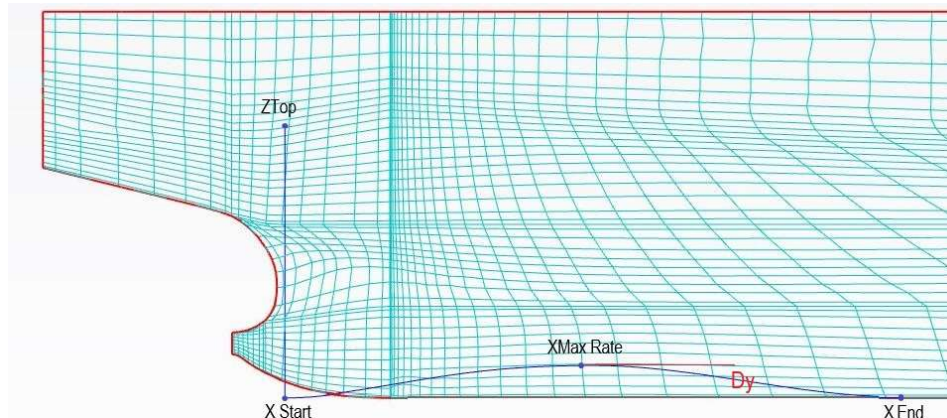
VARIABLES

Dy 1

Y VALUES

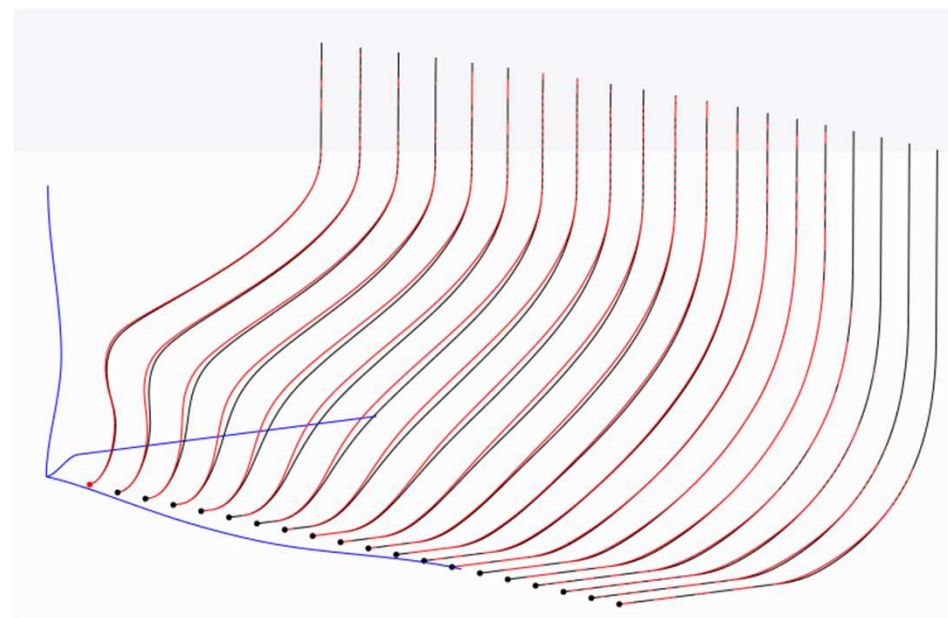
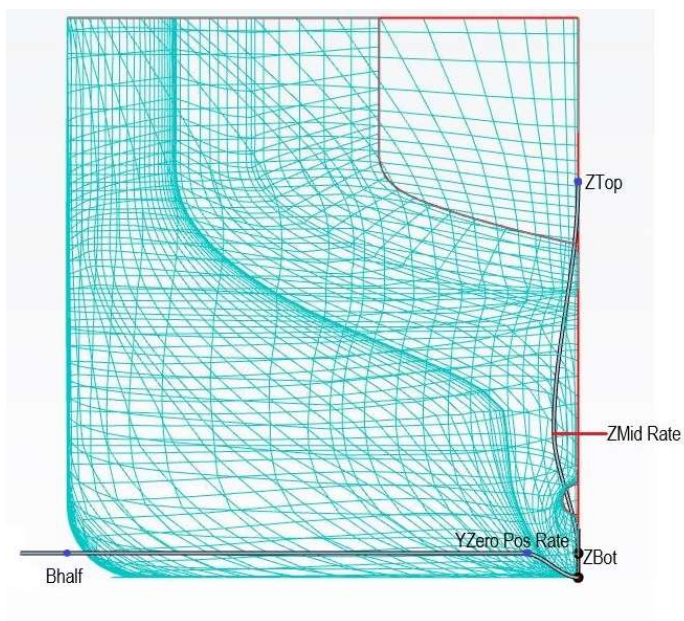
Bhalf 22

YZero Rate 0.1



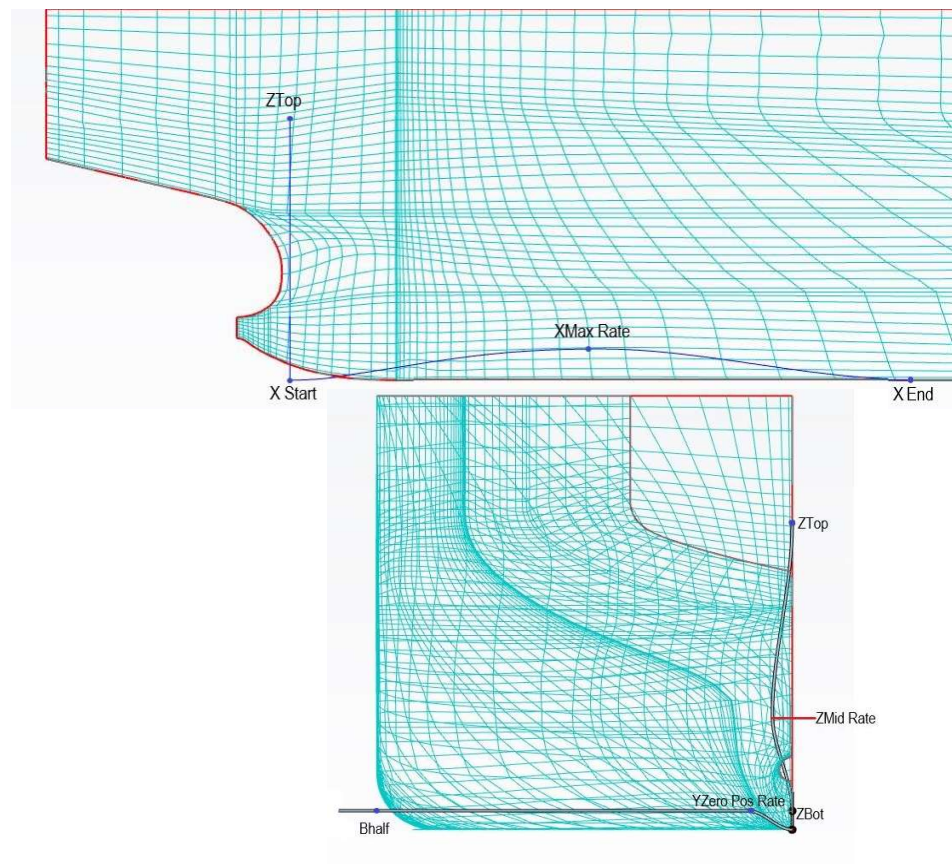
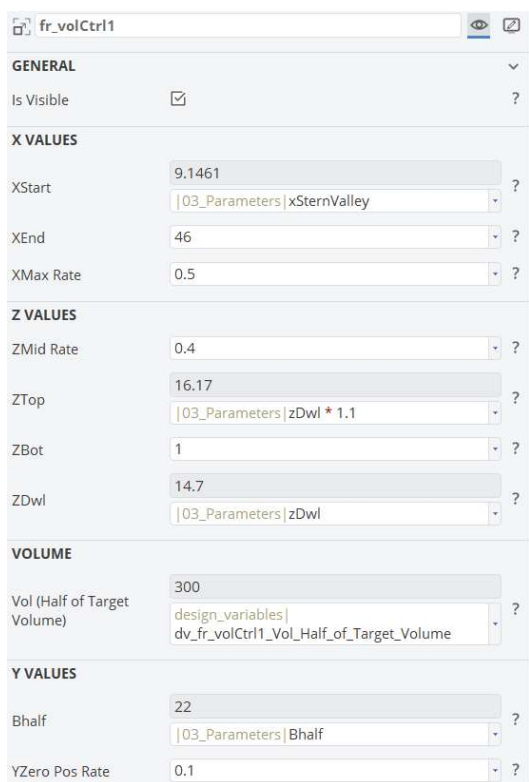
fr_volCtrl1

通过控制体积改变尾部丰满度



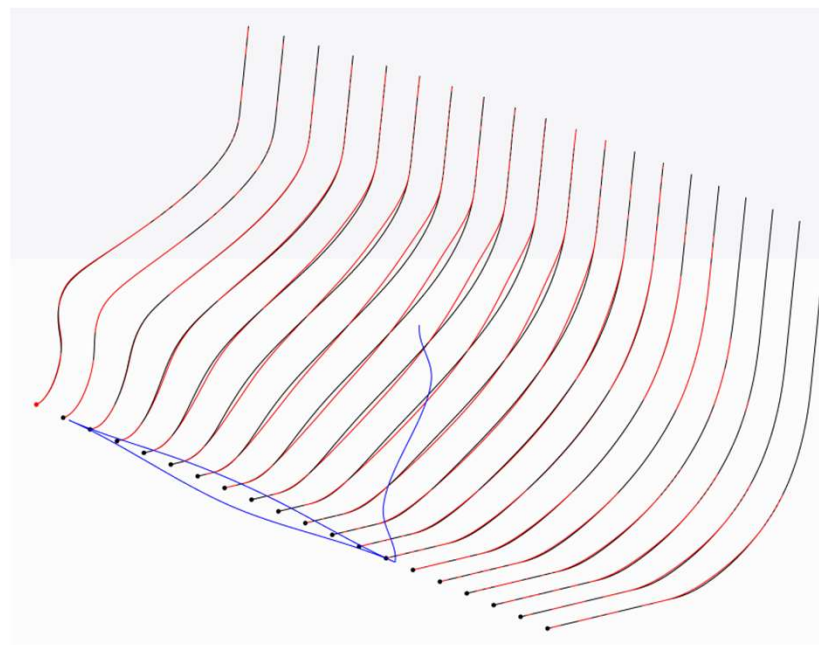
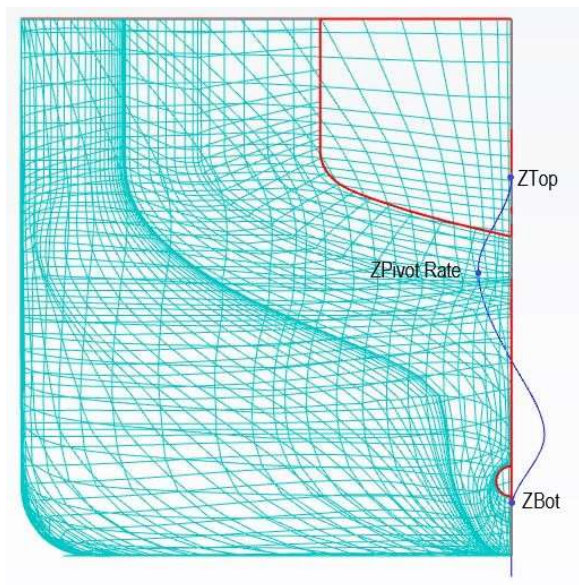
fr_volCtrl1

通过控制体积改变尾部丰满度



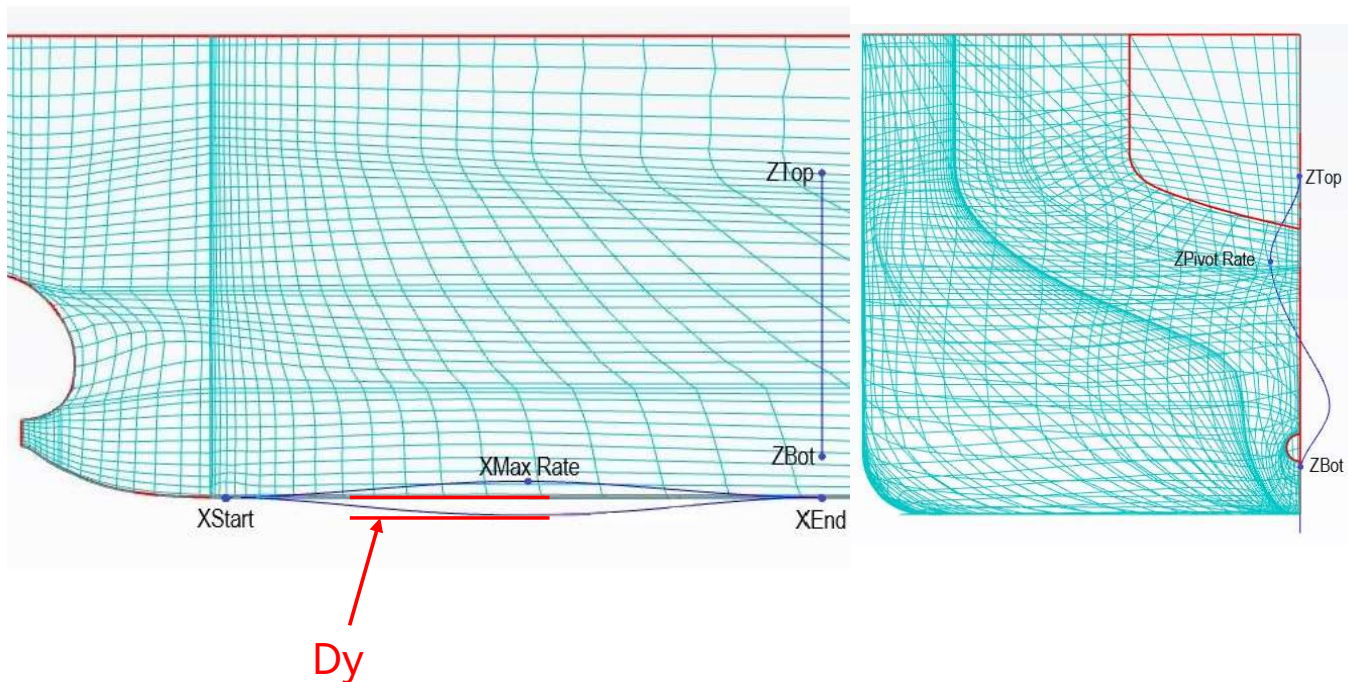
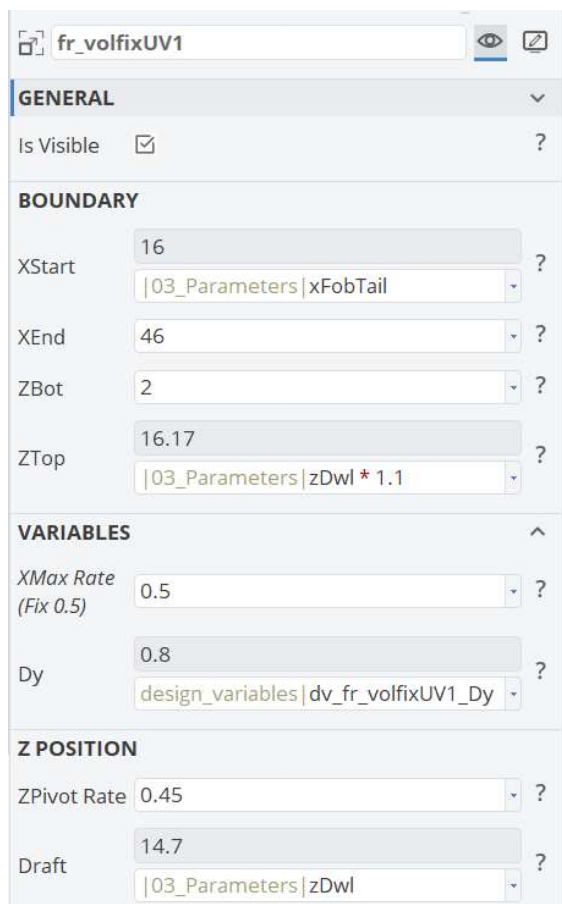
Fr_volfixUV1

保持排水体积不变，改变尾部的型线



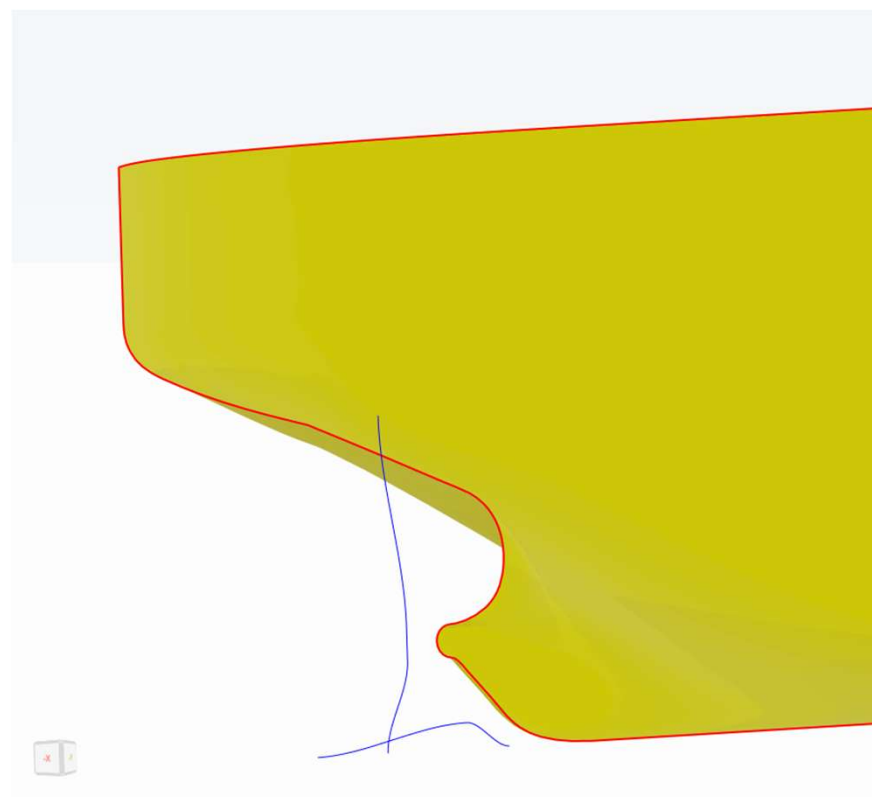
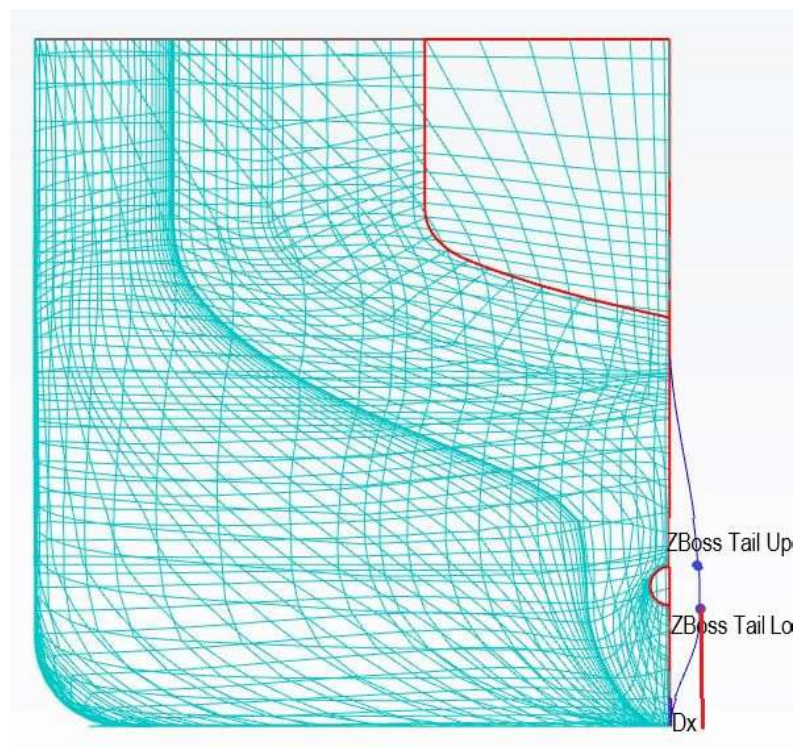
Fr_volfixUV1

保持排水体积不变，改变尾部的型线



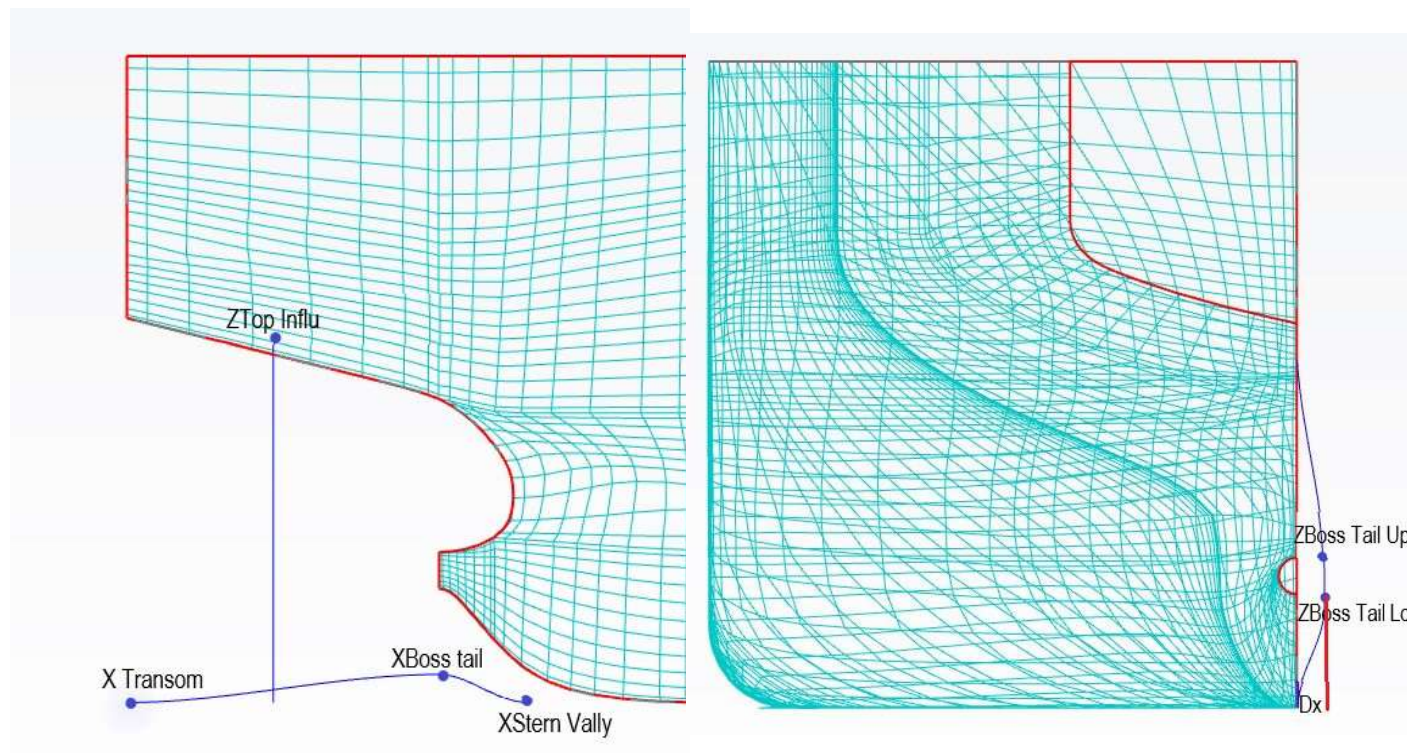
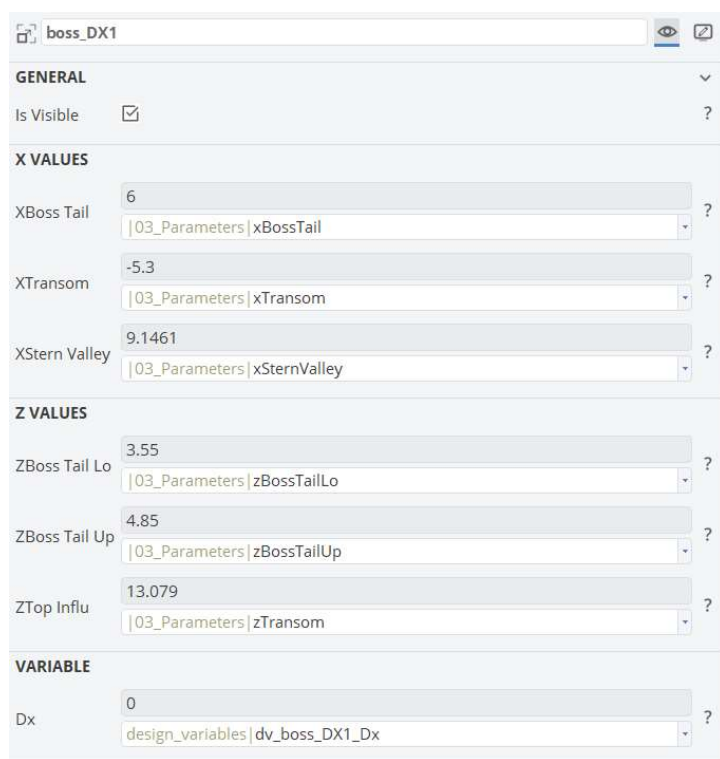
boss_DX1

改变尾鳍尾部的长度



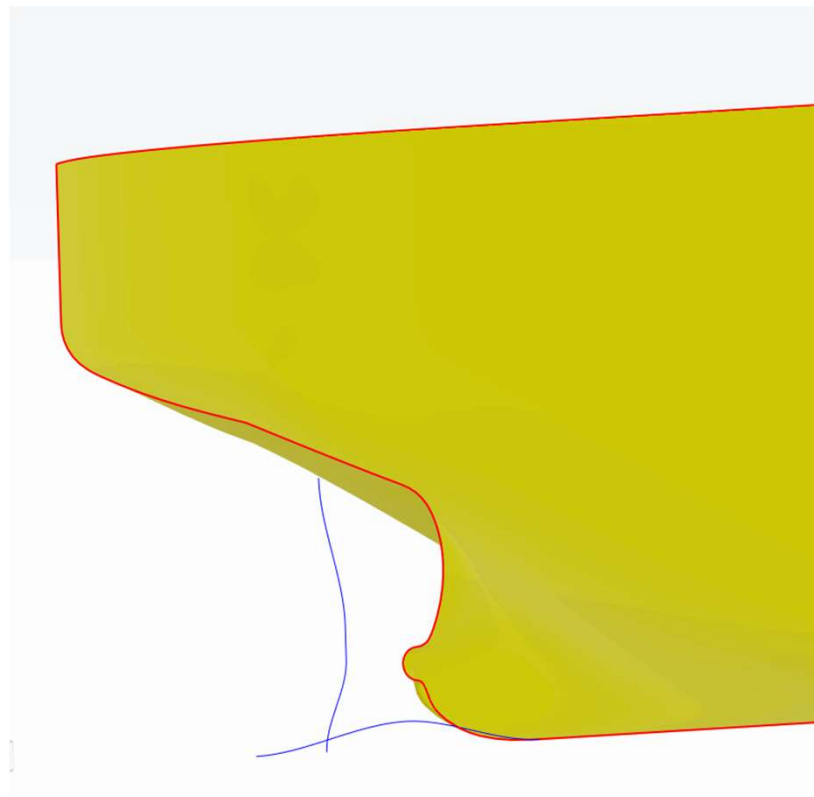
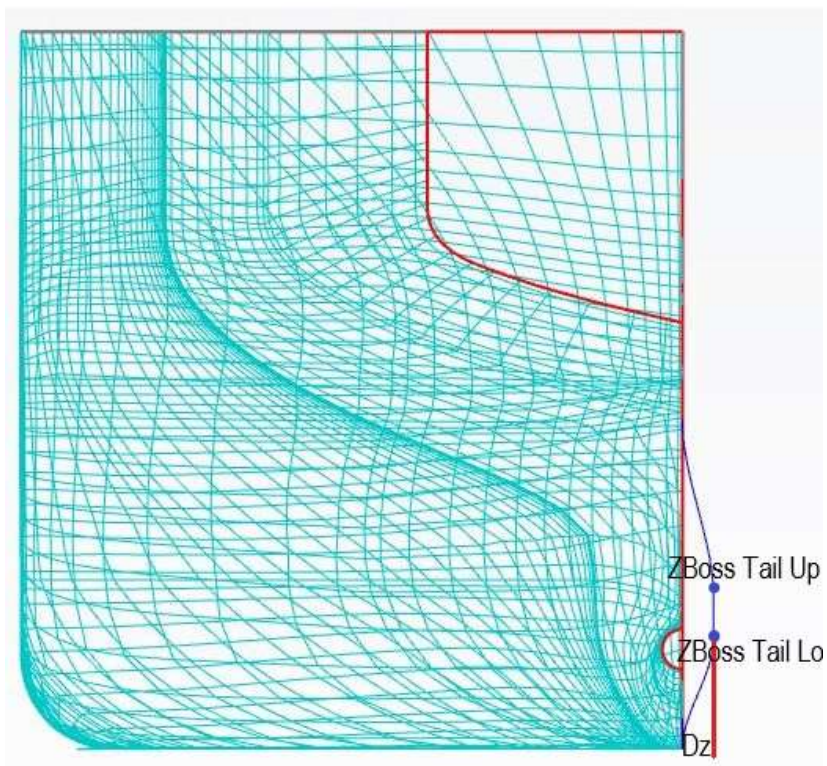
boss_DX1

改变尾鳍尾部的长度



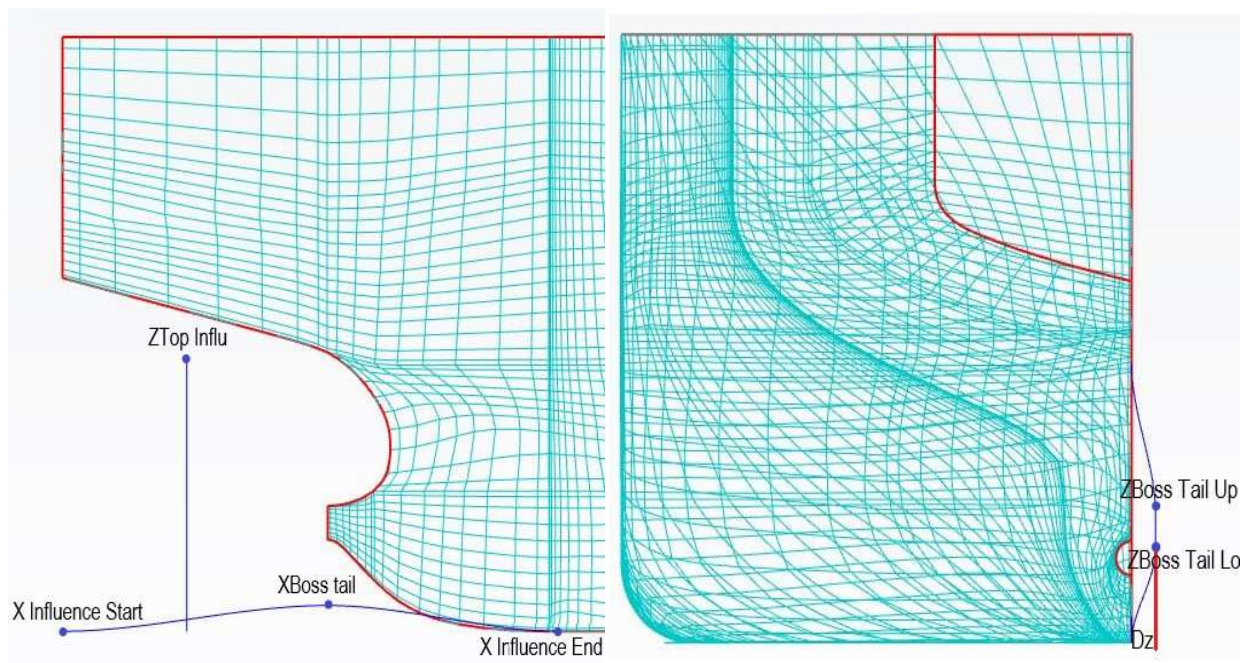
boss_DZ1

改变尾鳍尾部的高度



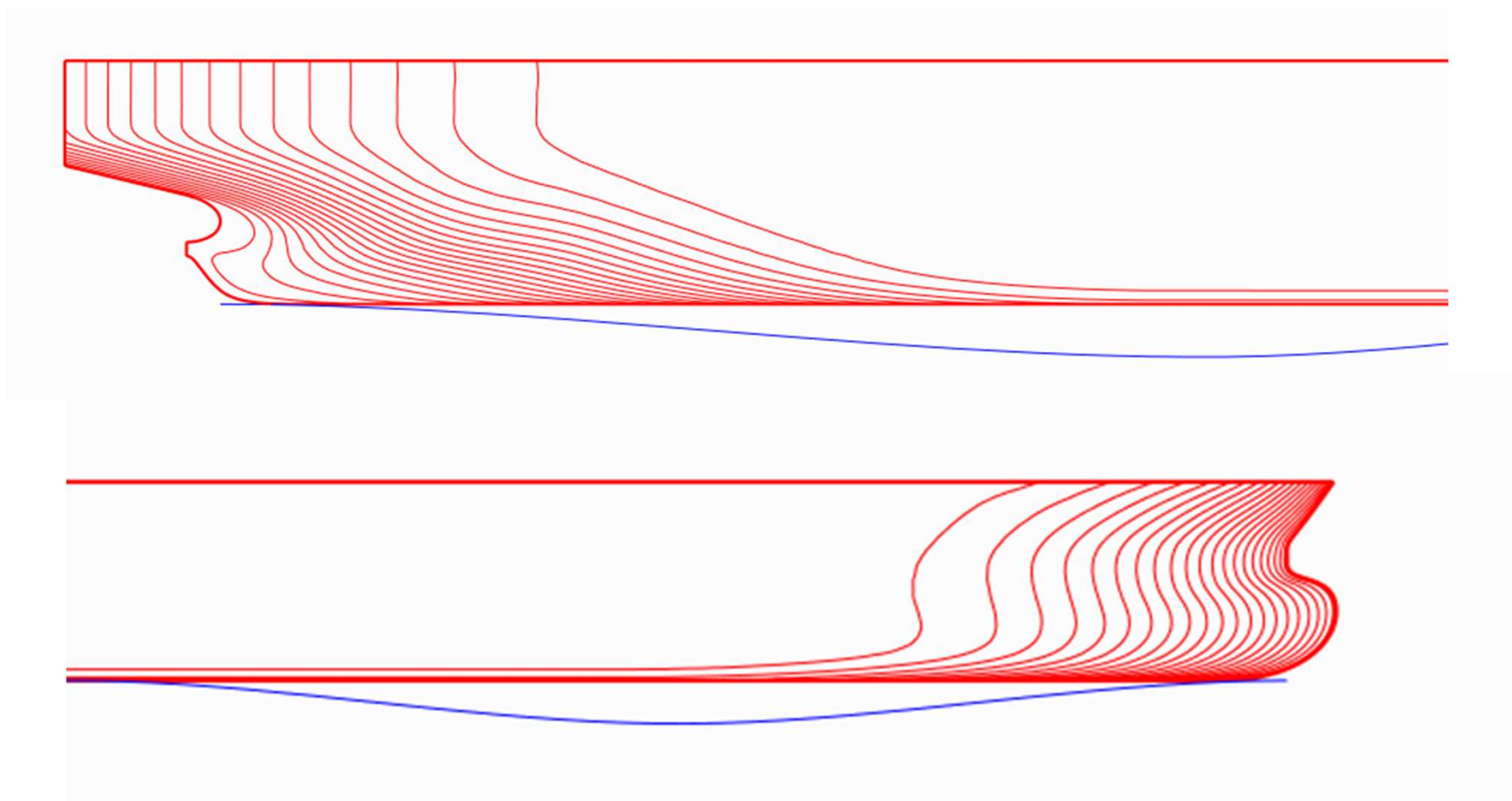
boss_DZ1

改变尾鳍尾部的高度



mid_Par1

改变平行中体长度



mid_Par1

改变平行中体长度

mid_Par1

GENERAL

Is Visible ?

X VALUES

XPar Beg 100.63 ?
|03_Parameters | xParBeg

XPar End 169.78 ?
|03_Parameters | xParEnd

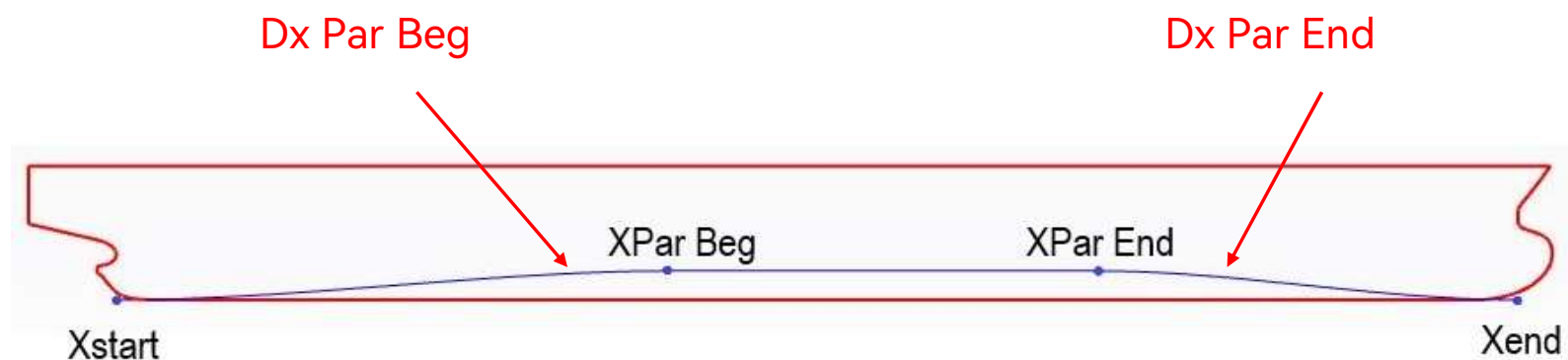
Xstart 9.1461 ?
|03_Parameters | xSternValley

Xend 239 ?
|03_Parameters | xFp

VARIABLES

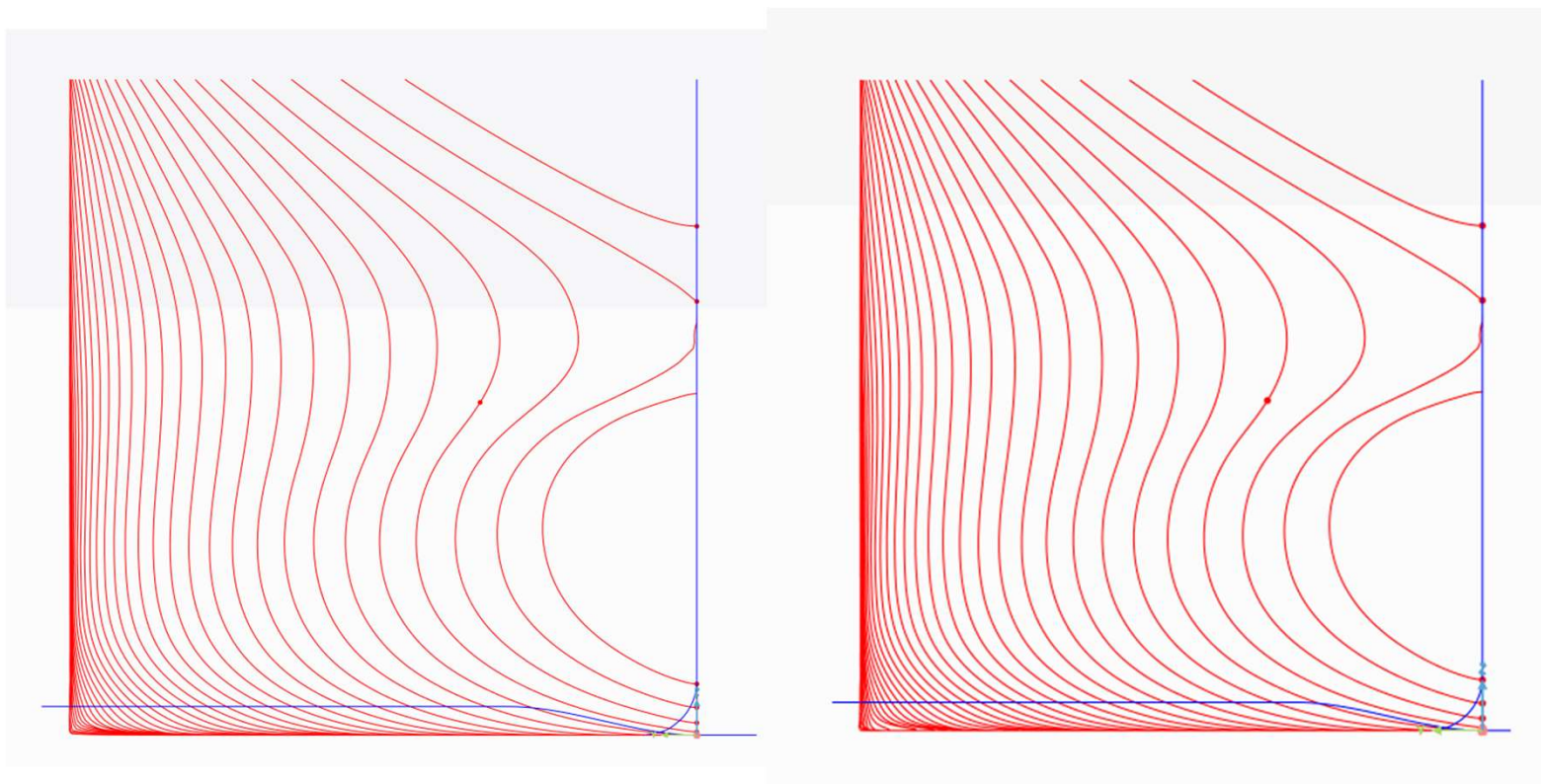
Dx Par Beg 5 ?
design_variables |
dv_mid_Par1_Dx_Par_Beg

Dx Par End 5 ?
design_variables |
dv_mid_Par1_Dx_Par_End



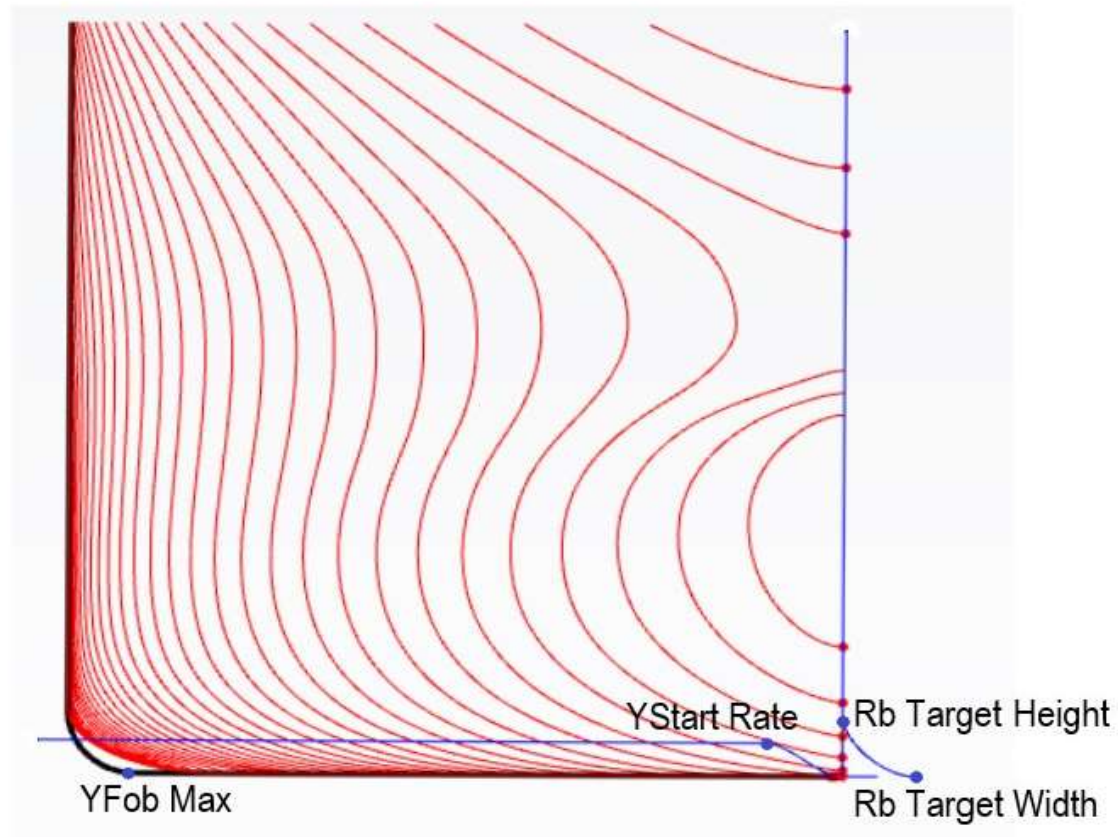
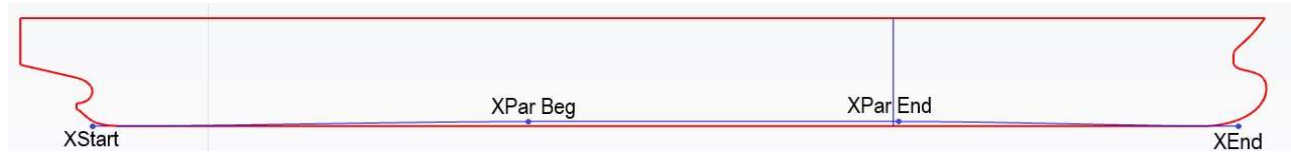
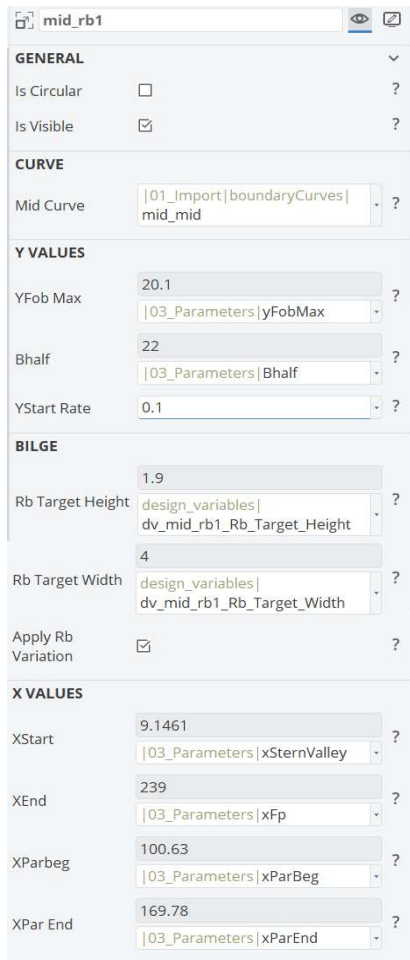
Mid_rb1

改变船体舳部



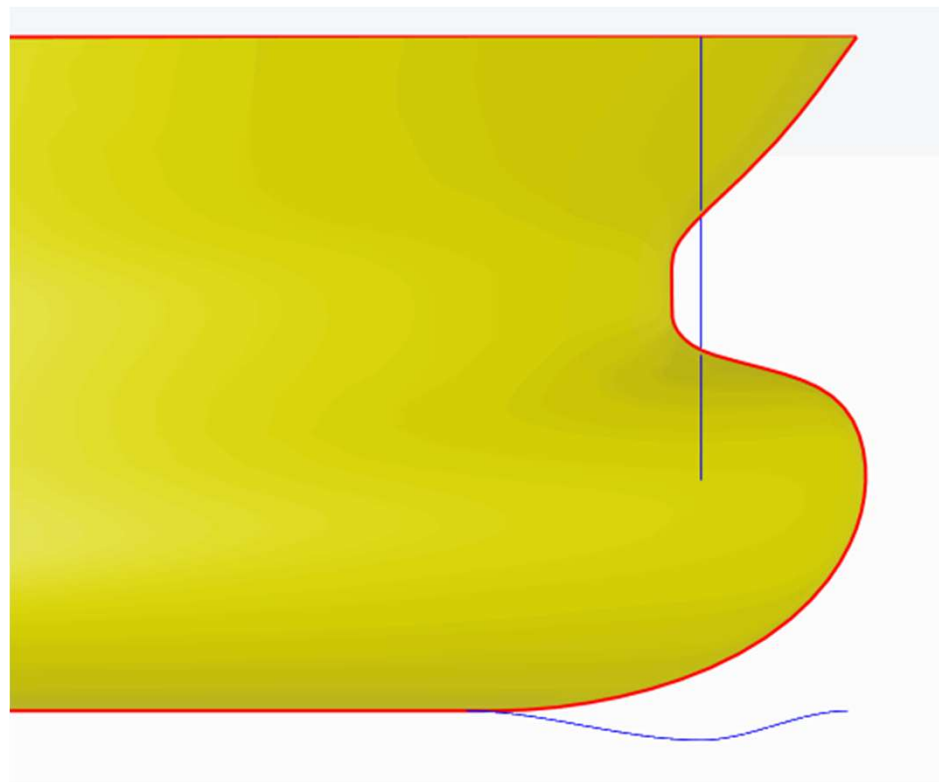
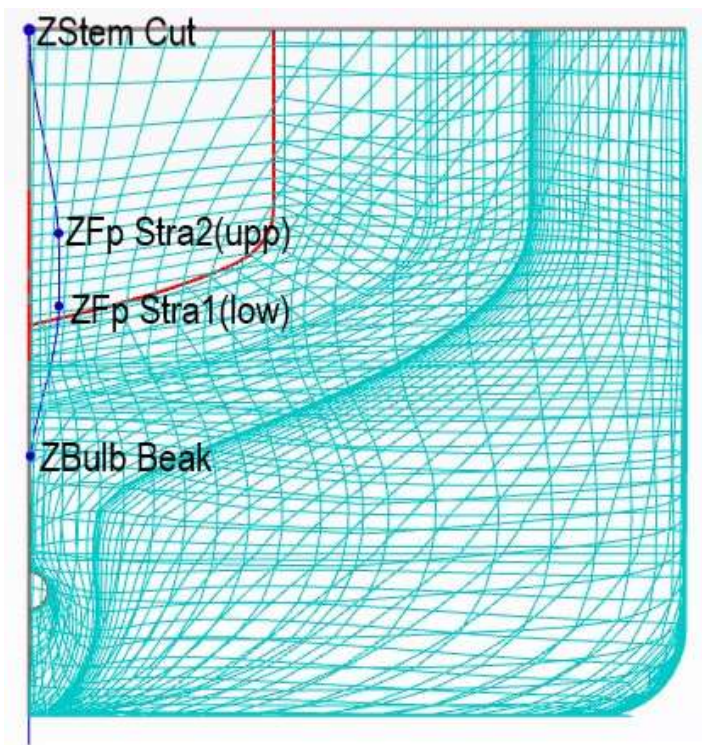
Mid_rb1

改变船体舭部



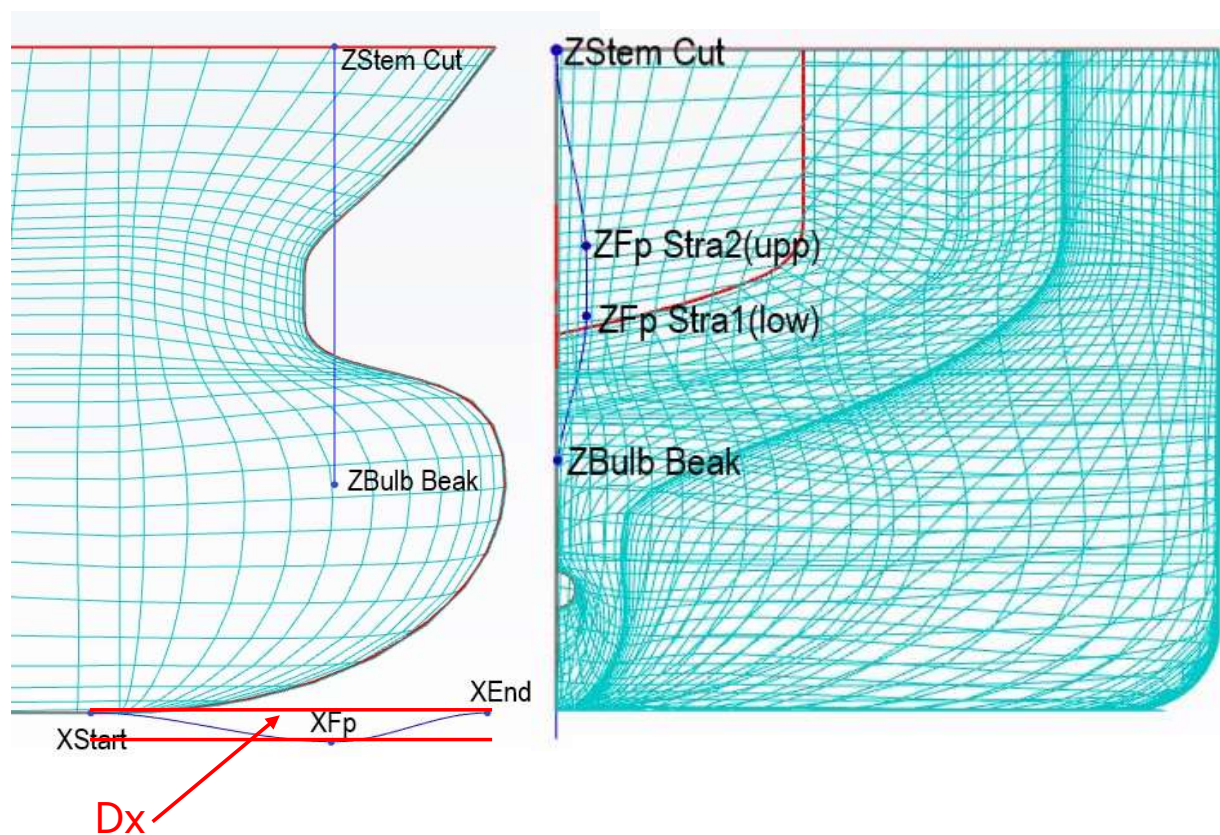
MovePosOfXp

改变艏柱位置



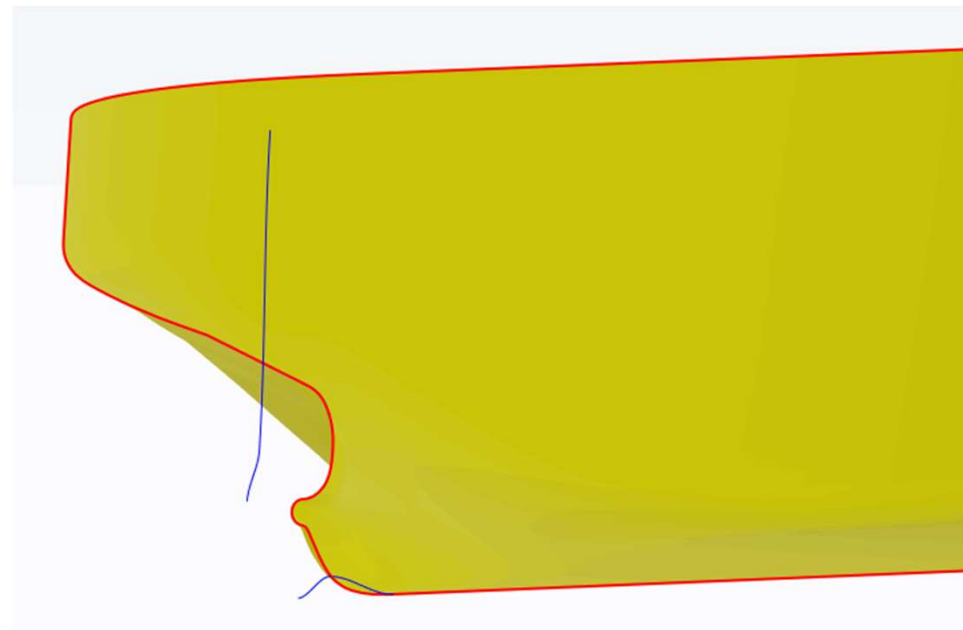
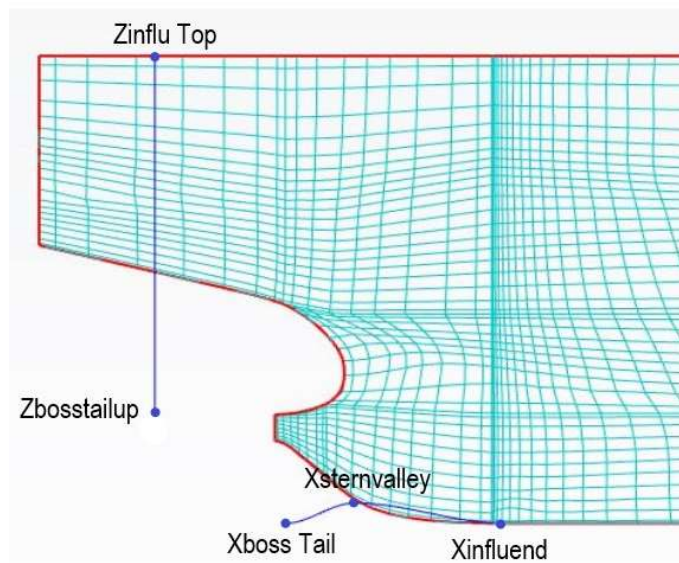
MovePosOfXp

改变艏柱位置



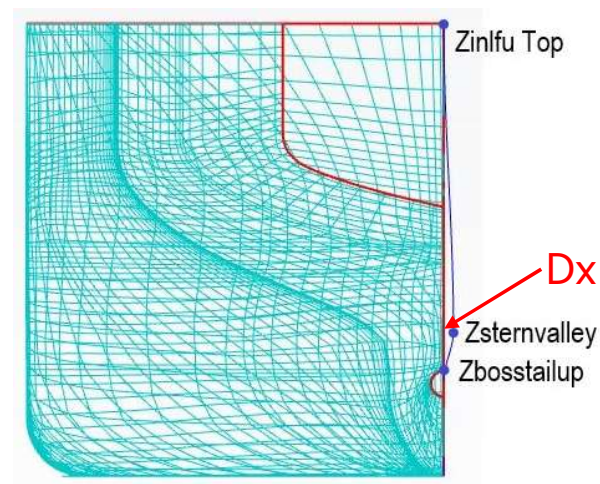
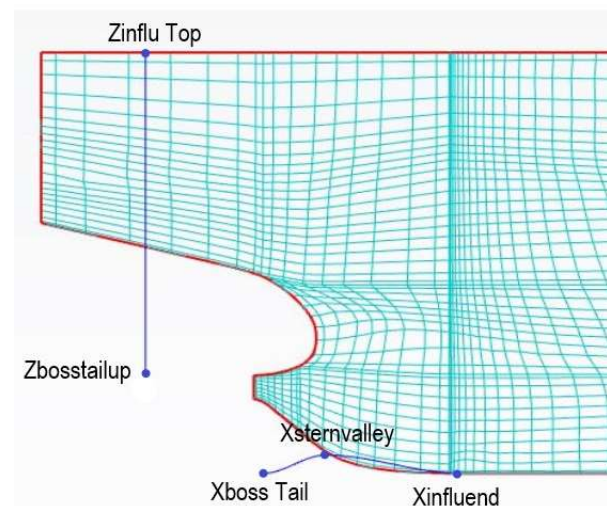
stern_dxValley1

改变尾柱形状



stern_dxValley1

改变尾柱形状



谢谢观看！

天泱 - 智能工业设计软件全球引领者

