

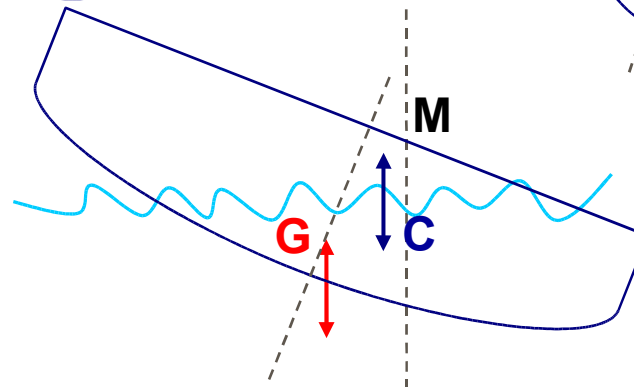
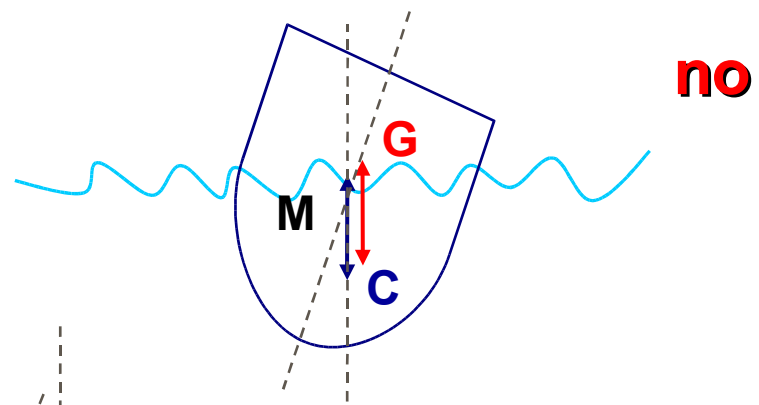
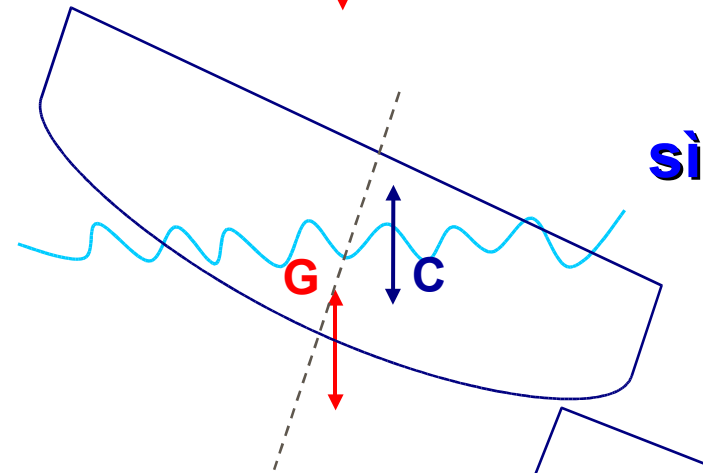
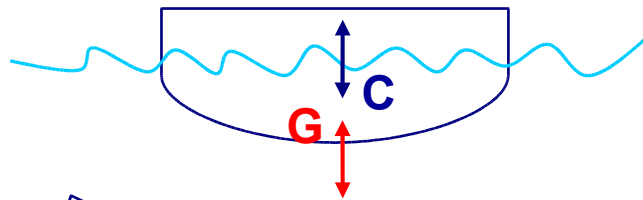
La fisica e la barca: perché e come

- **Il galleggiamento**
- **Le manovre**
- **La vela**
- **La navigazione**

Il galleggiamento 1/2

G = centro di gravità

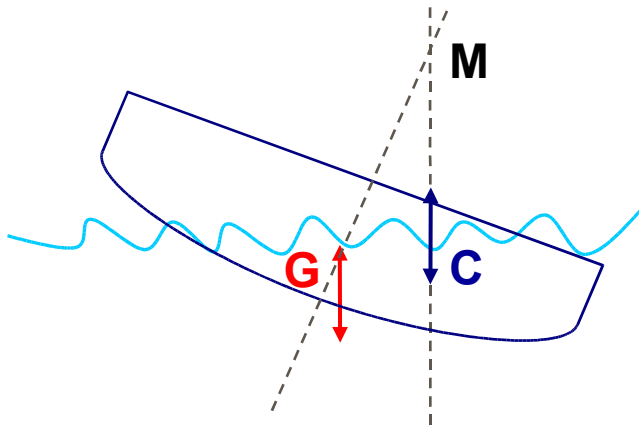
C = centro di carena



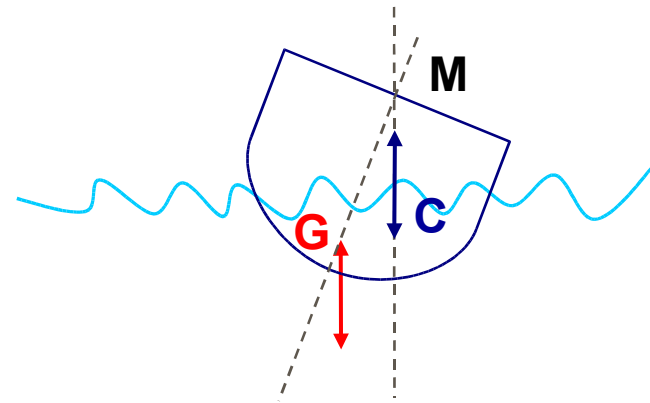
M = metacentro

Il galleggiamento 2/2

Stabilità di Forma



Stabilità di Peso



Le manovre 1/2

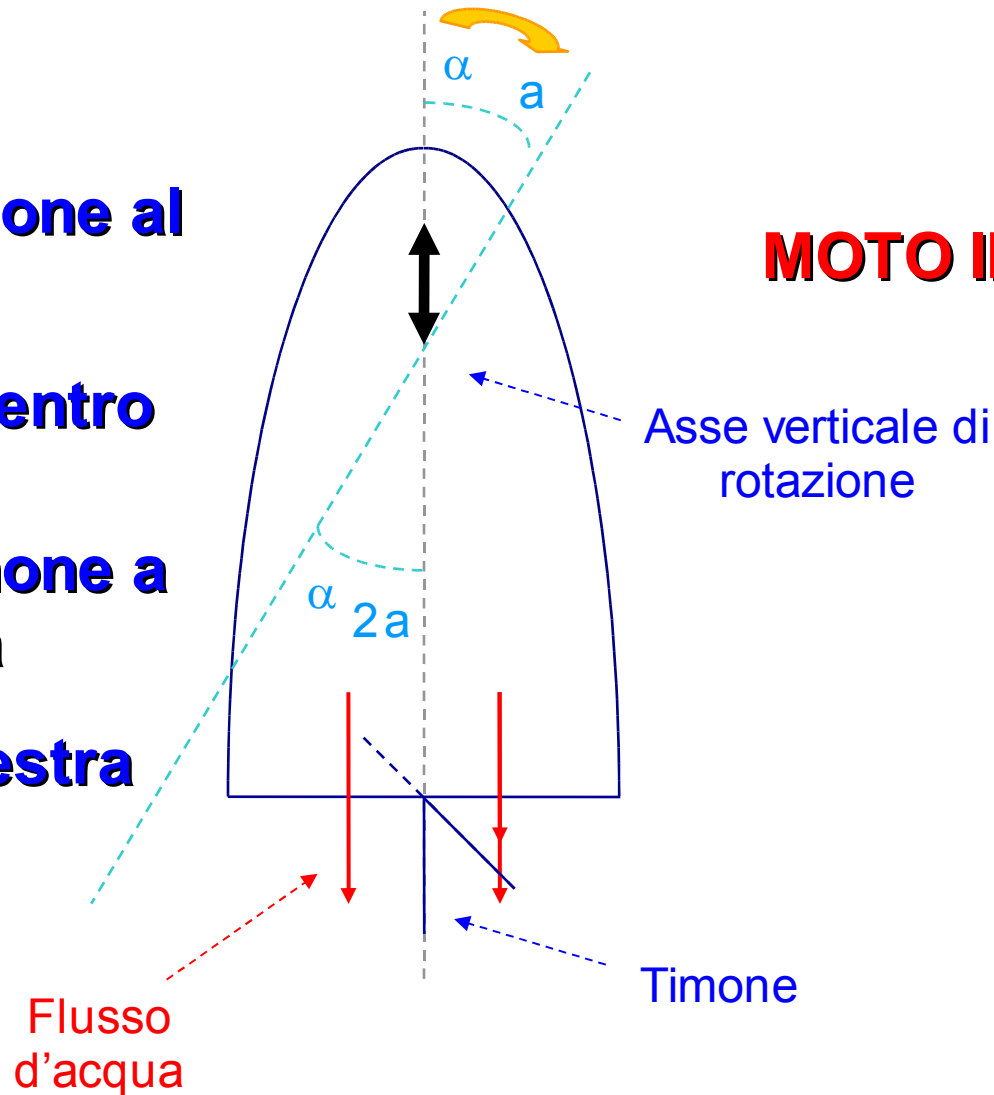
Barra del timone al centro

Timone al centro

Barra del timone a sinistra

Timone a destra

MOTO IN AVANTI

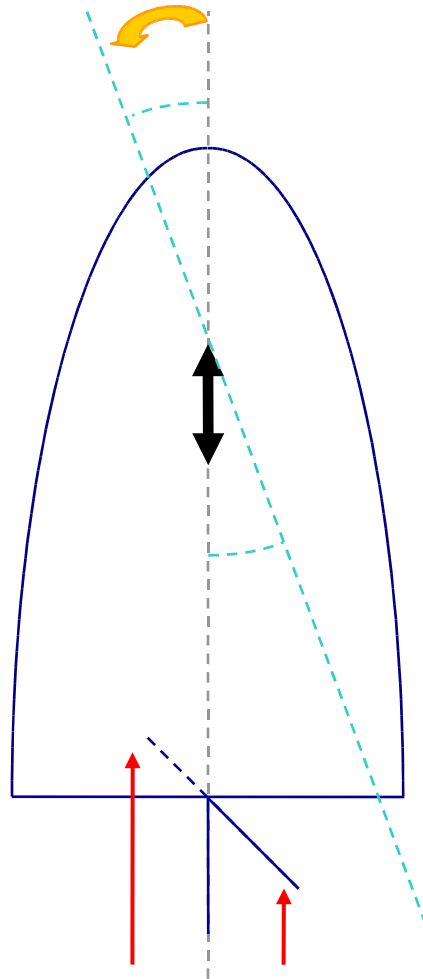


Le manovre 2/2

Barra del timone a sinistra

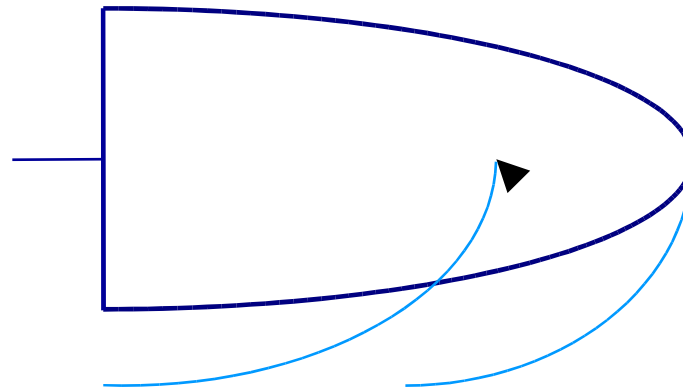
Timone a destra

MOTO INDIETRO



La vela 1/5

sopravvento

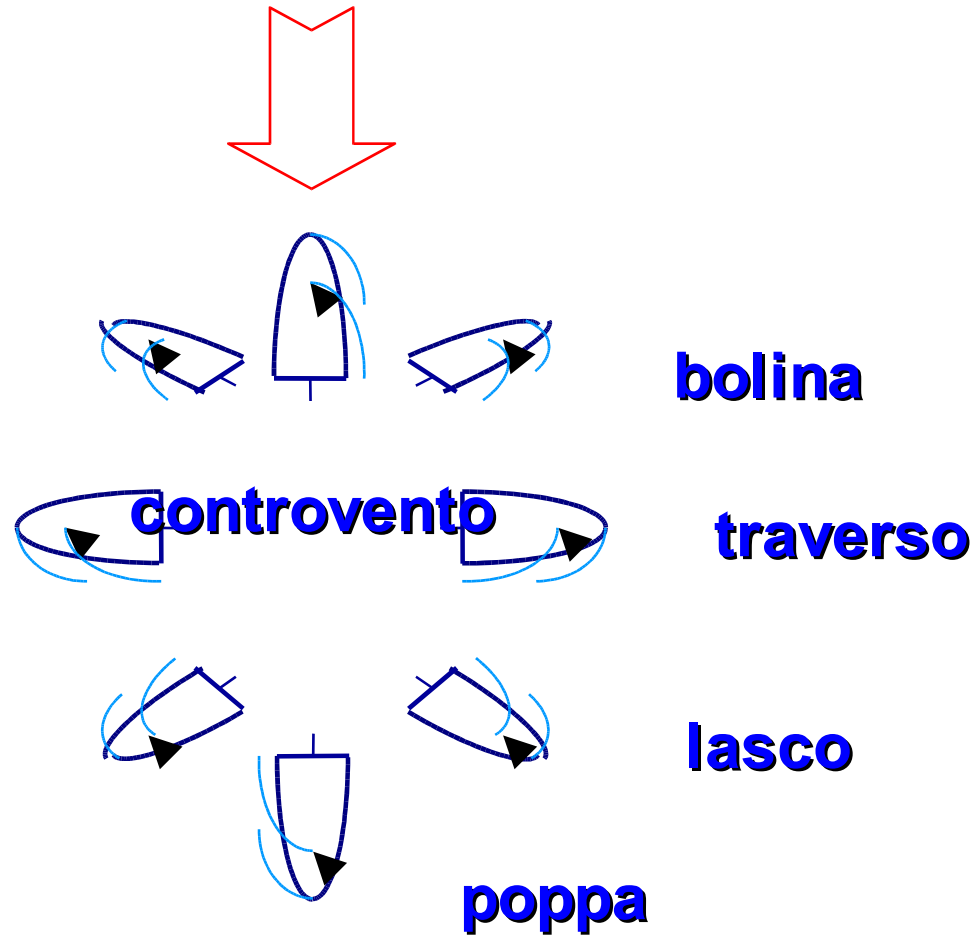


sottovento

MURA A SINISTRA

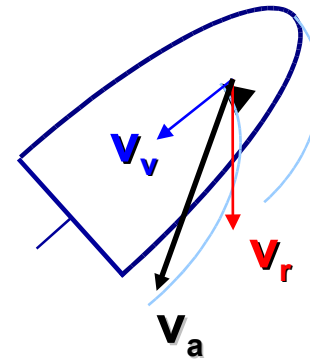
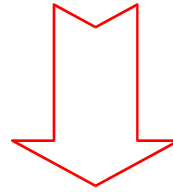
La vela 2/5

**VENTO E
ANDATURE**



La vela 3/5

IL VETTORE VENTO



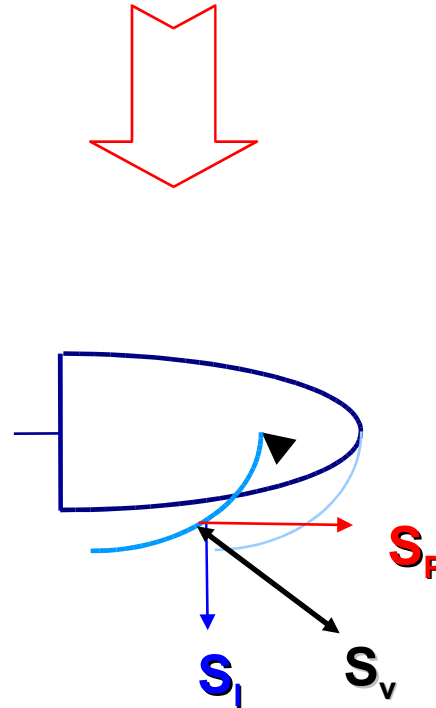
V_r = vento reale

V_v = vento di velocità

V_a = vento apparente

La vela 4/5

L'AZIONE DEL VENTO SULLE VELE: IL VETTORE SPINTA



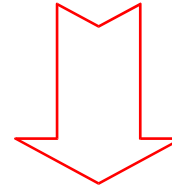
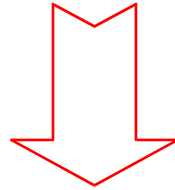
S_p = spinta propulsiva

S_l = spinta laterale (deriva)

S_v = spinta velica

La vela 5/5

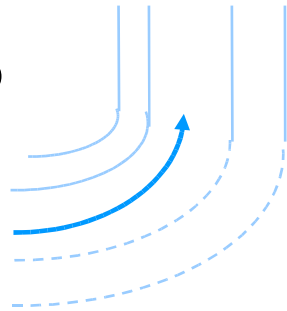
LA SPINTA PROPULSIVA



sopravvento

$v \ll$

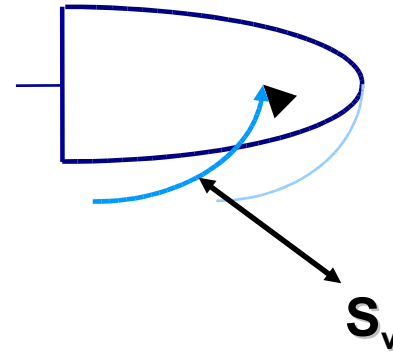
$p \gg$



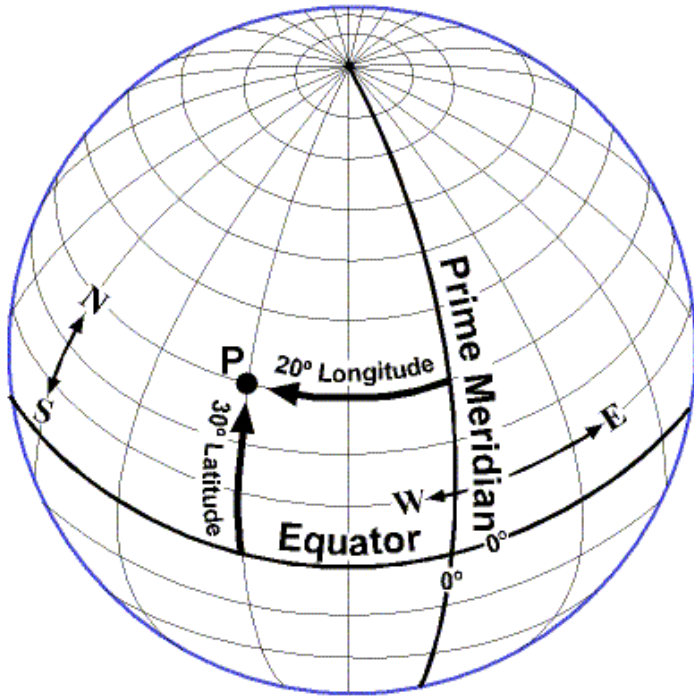
sottovento

$v \gg$

$p \ll$

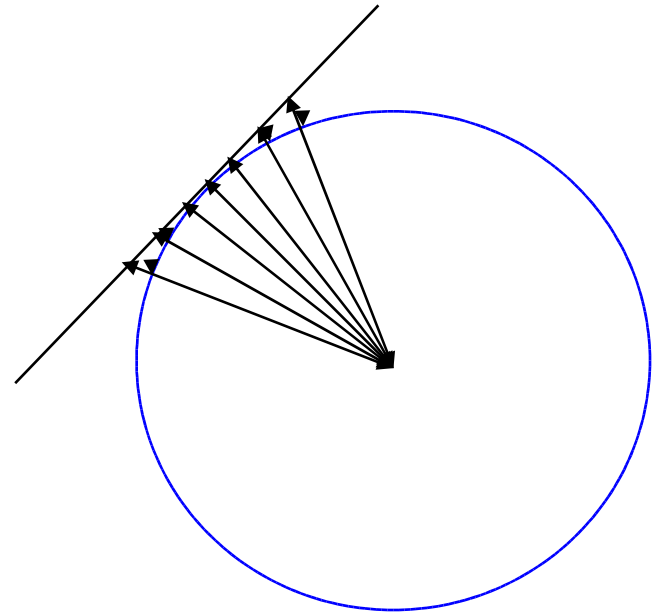


La navigazione



Tony Kirvan 11-8-97

Proiezione gnomonica



Cerchio massimo terrestre

- 40.000 km

- $360^\circ = 360^\circ \times 60' = 21.600'$

- 21600 miglia