

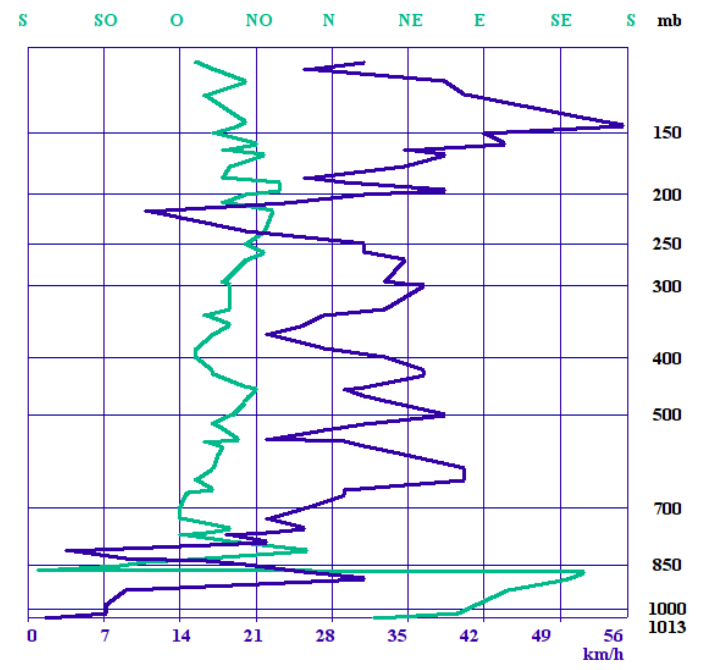
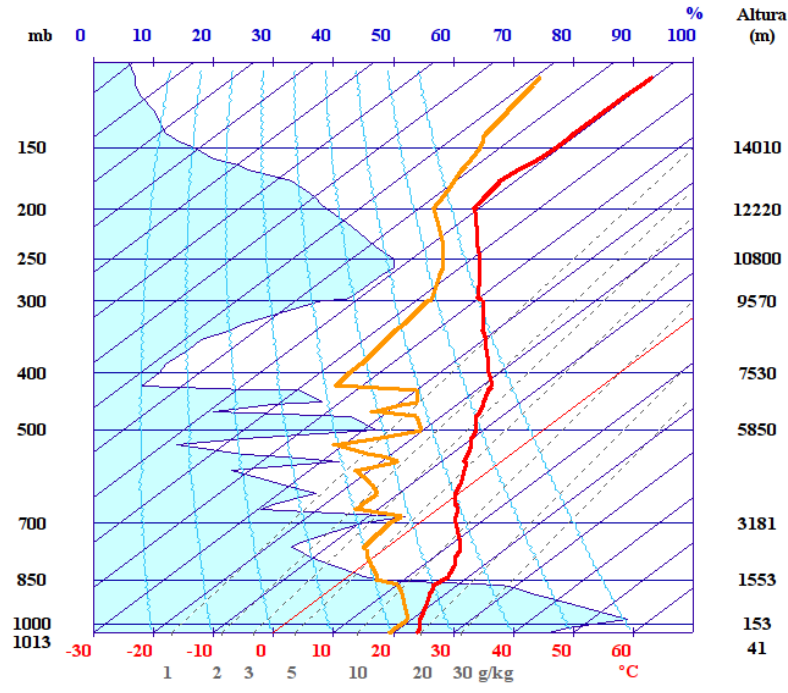
Diurnal moist convection in Majorca under sea breeze conditions: idealized numerical experiments



Javier Martín Martín, predictor en la OVM de Valencia
Dr. Romualdo Romero March, Universitat de Les Illes Balears

TEMPERATURE AND MOIST VERTICAL CONDITIONS

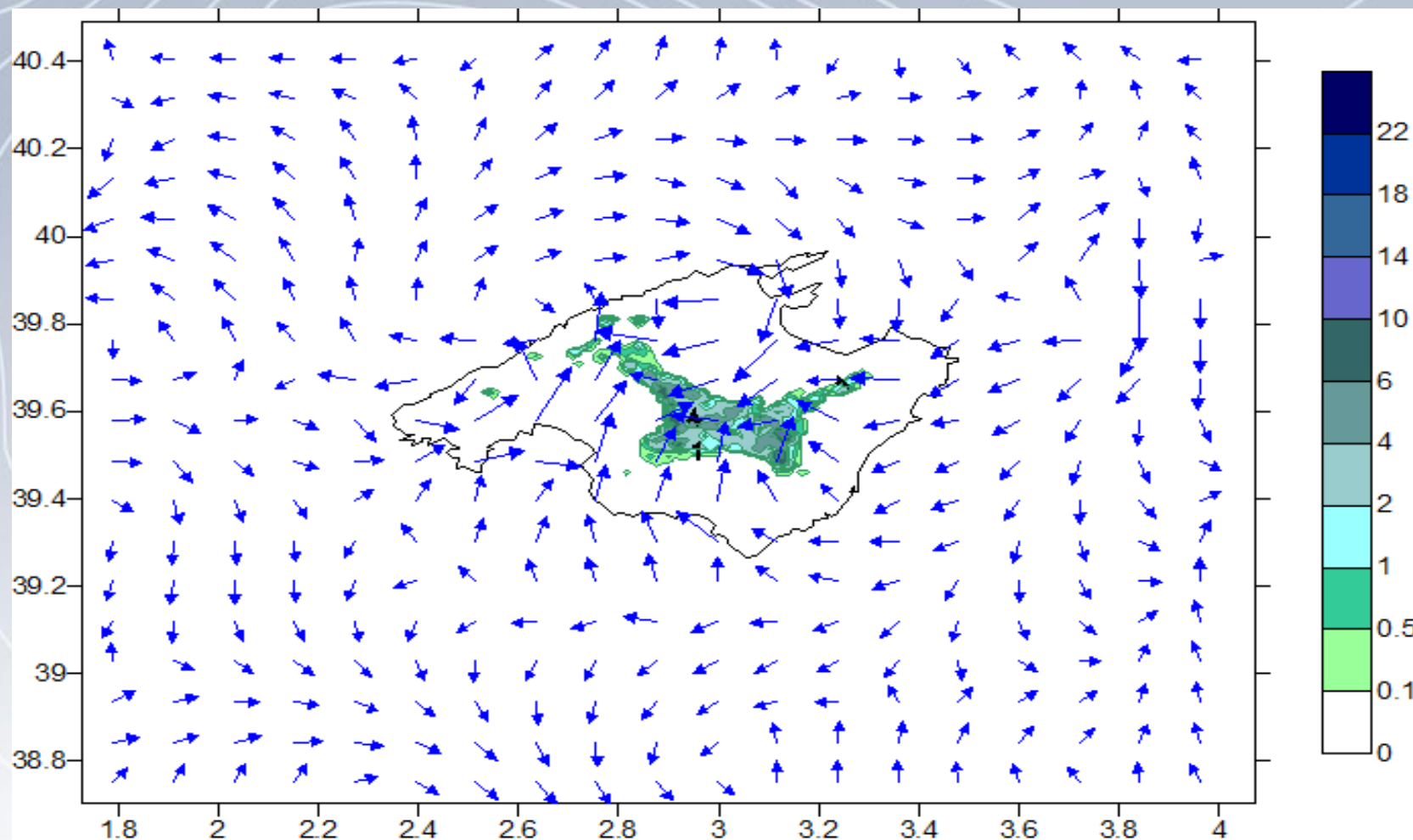
Sondeo de Palma de Mallorca (España) a las 00 horas UTC del día 30 de Agosto de 2004



Palma de Mallorca, 30 de agosto del 2004



CONTROL SIMULATION



18/09/18

AMPLITUDE SCORE

(object-oriented verification)



$$A = \frac{D(R_{for}) - D(R_{obs})}{0.5 [D(R_{for}) + D(R_{obs})]}$$

A takes values between the range [-2,2]

A = 0, Rno_oro = Rsi_oro

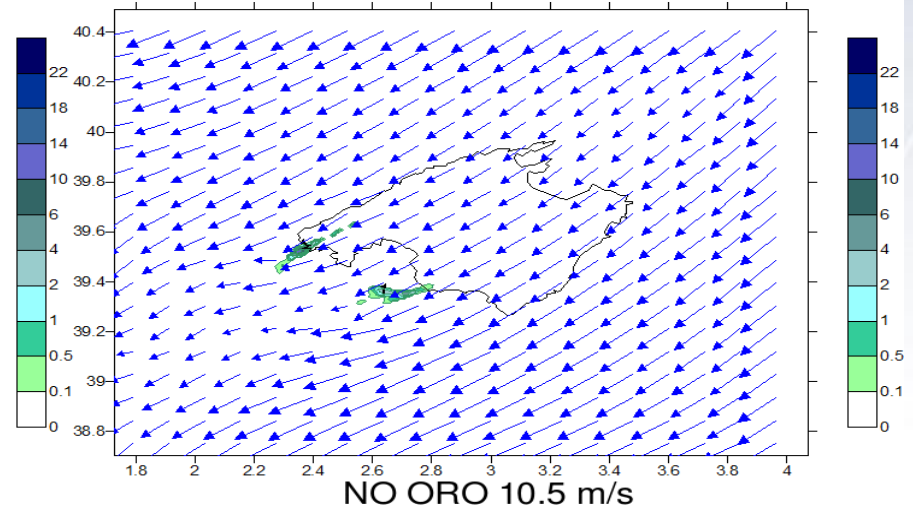
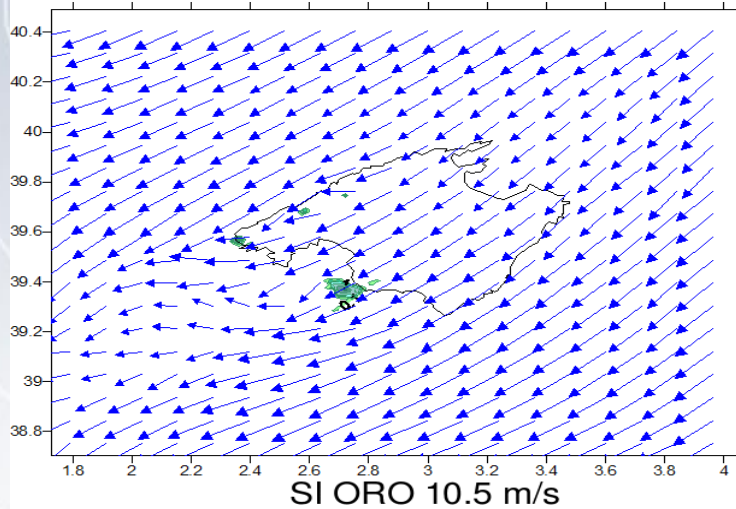
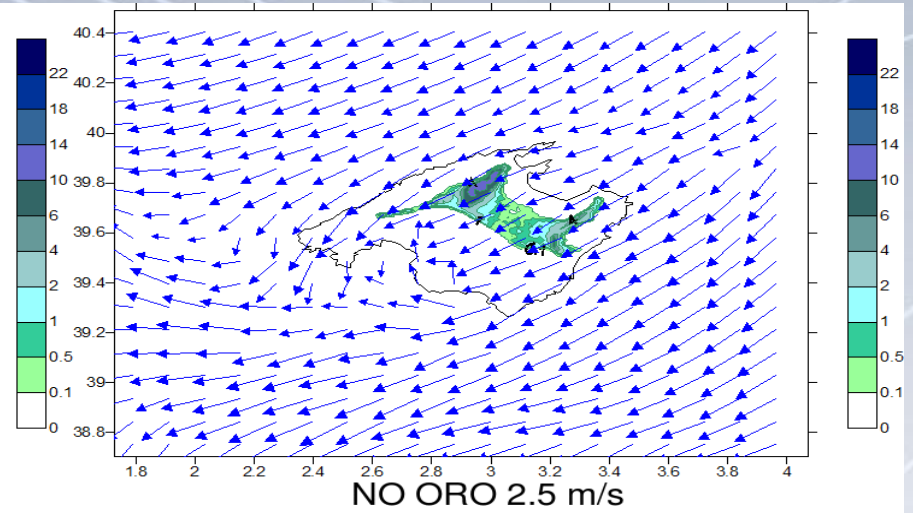
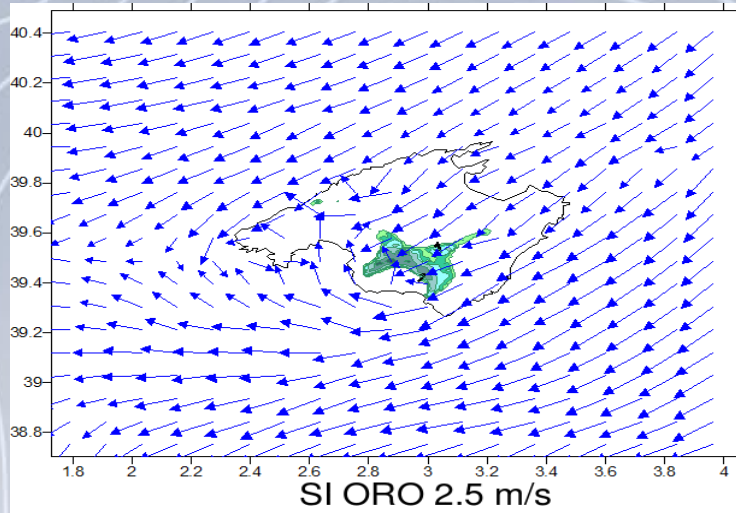
A > 0, Rno_oro > Rsi_oro. A = 1 indicates that the “Rno_oro” overestimates the precipitation domain-averaged in a factor 3.

A < 0, Rsi_oro > Rno_oro. A = -1 indicates that “Rno_oro” underestimates the precipitation domain-averaged in a factor -3

Rno_oro vs Rsi_oro. Amplitude (A)

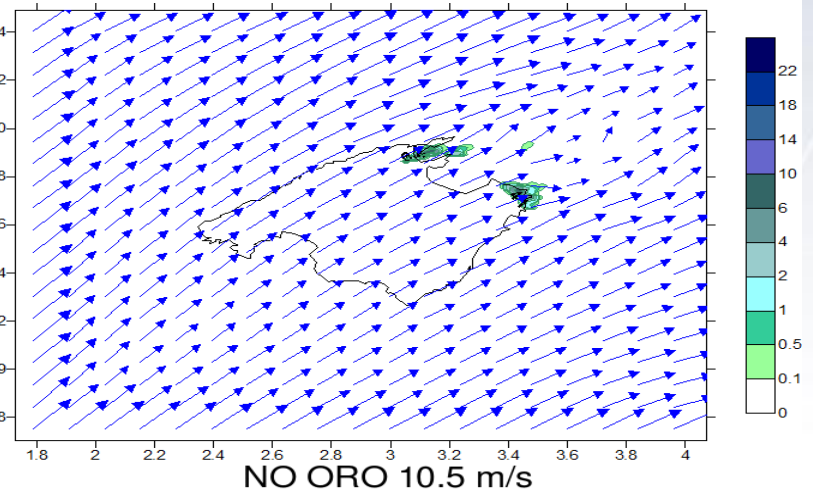
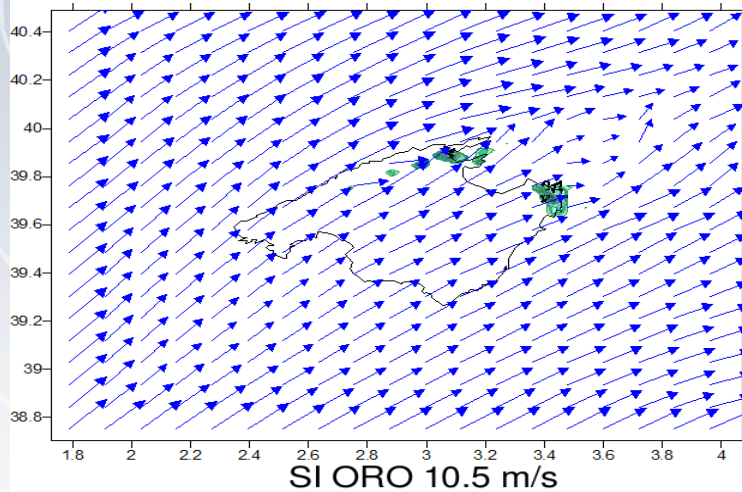
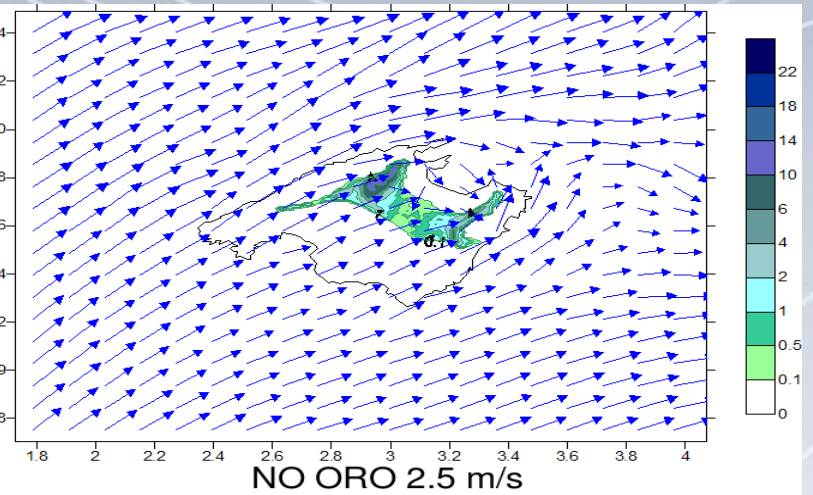
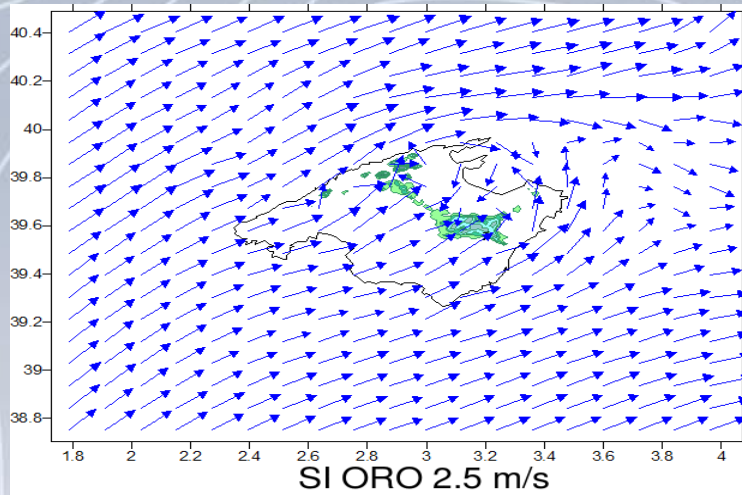
ff / dd	Weak (2.5 m/s)	Weak-moderate (7.0m/s)	Moderate (10.5 m/s)	Strong (14.0 m/s)
45º	0.72	0.13	0.30	-0.80
90º	0.78	0.87	-0.94	-2.00
135º	0.84	1.76	-1.69	-2.00
180º	0.79	1.19	-1.23	-2.00
225º	1.36	0.20	-0.32	-1.32
270º	0.63	0.29	-1.92	-2.00
315º	0.14	-0.07	-1.78	-2.00
360º	0.83	0.24	-0.79	-2.00

WIND DIRECTION: 45°



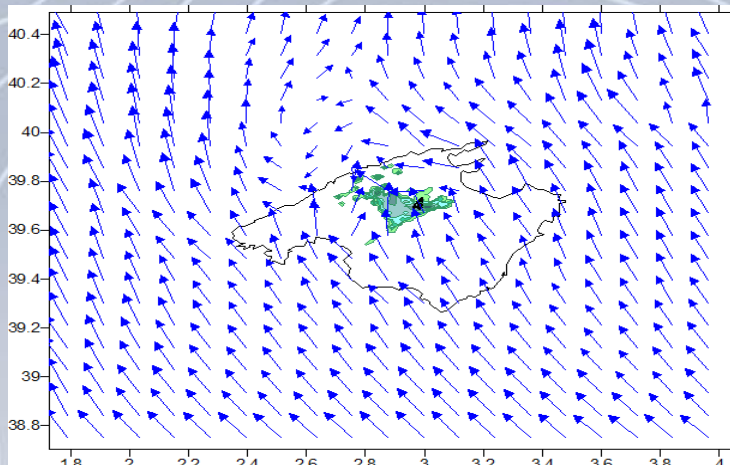
18/09/18

WIND DIRECTION: 225°

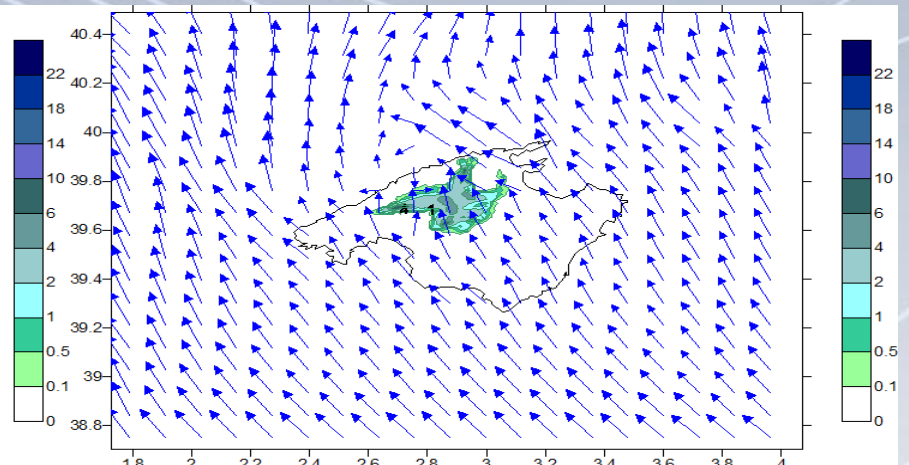


18/09/18

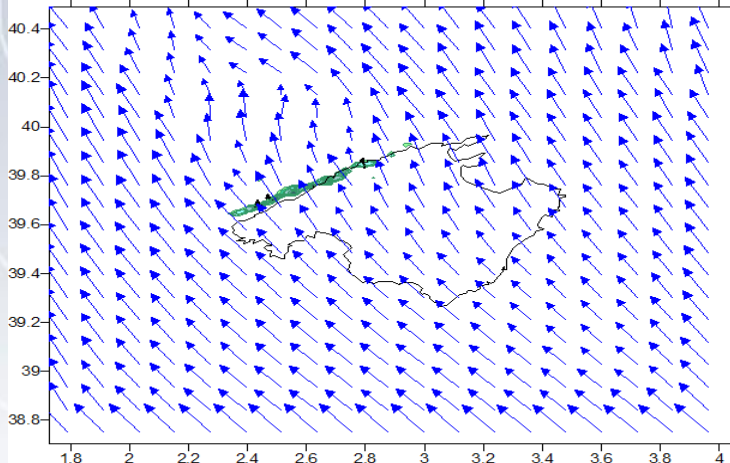
WIND DIRECTION: 135°



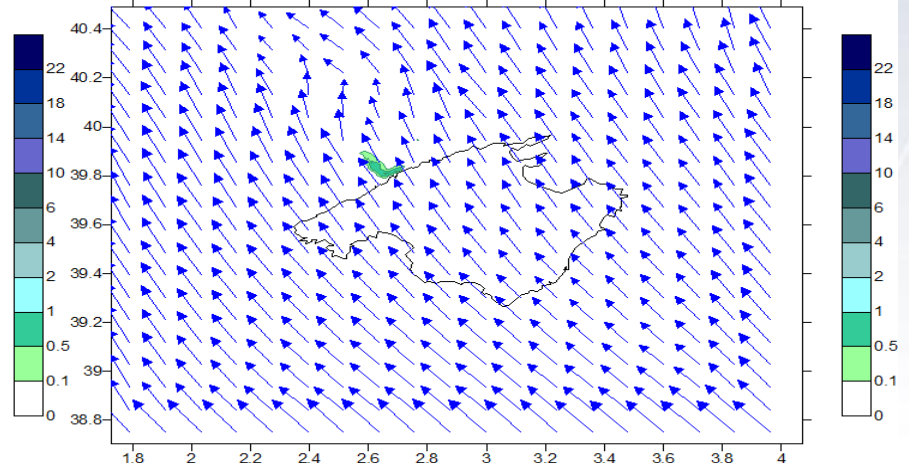
SI ORO 2.5 m/s



NO ORO 2.5 m/s

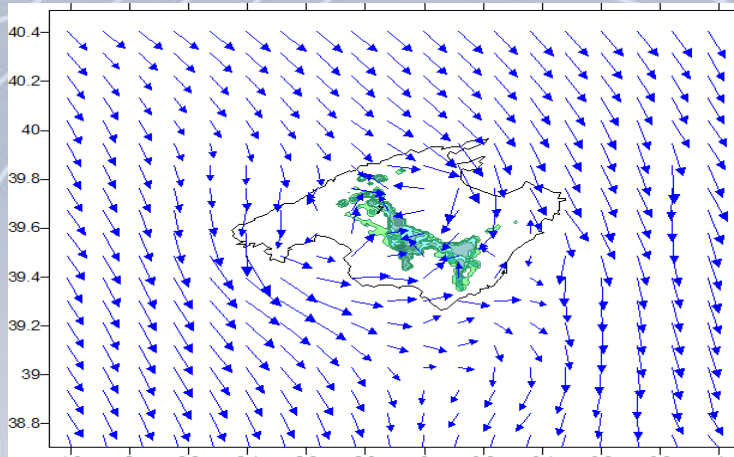


SI ORO 10.5 m/s

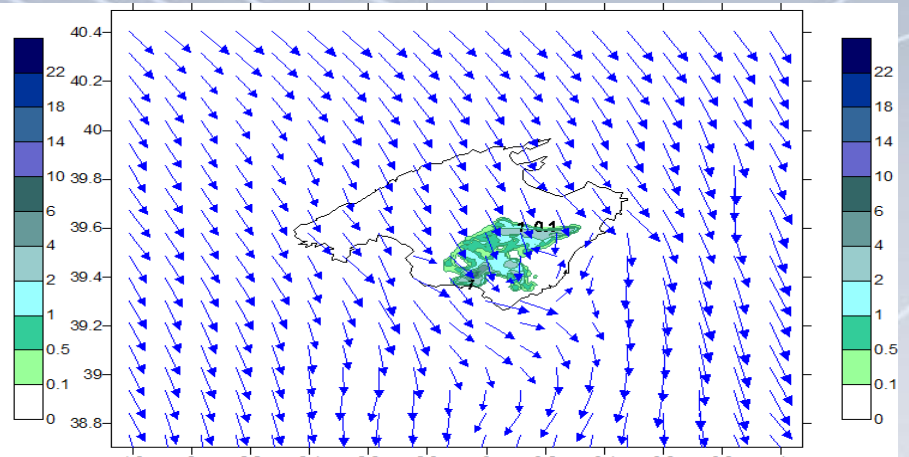


NO ORO 10.5 m/s

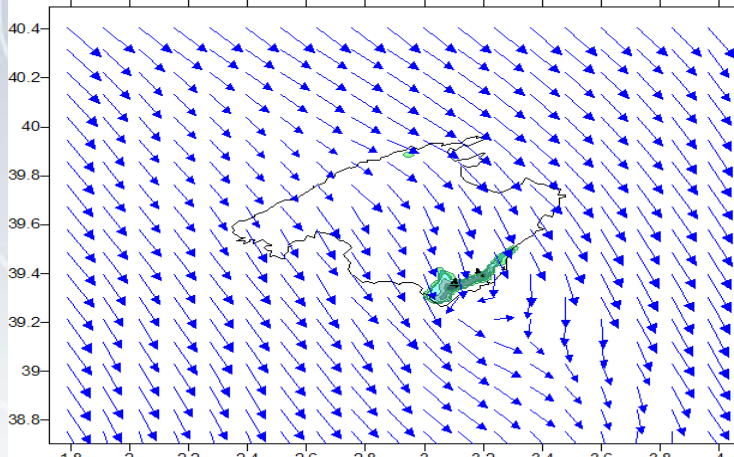
WIND DIRECTION: 315°



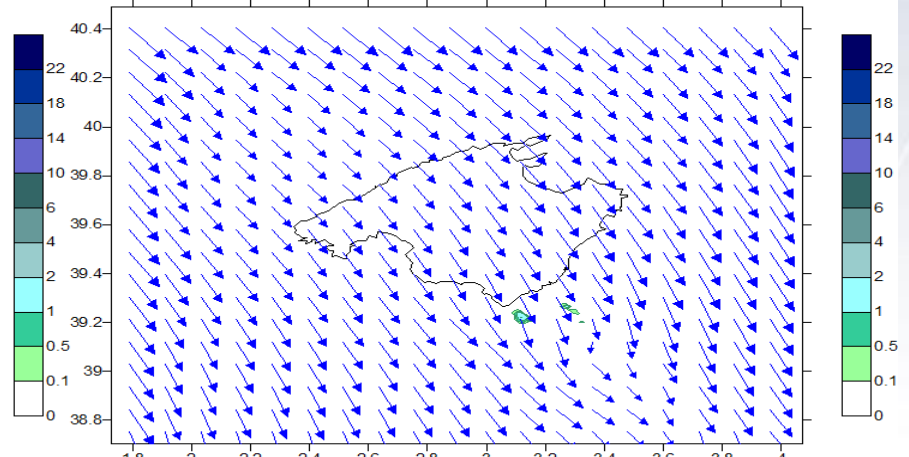
SI ORO 2.5 m/s



NO ORO 2.5 m/s



SI ORO 10.5 m/s



NO ORO 10.5 m/s

CONCLUSIONES



- 1 – Intensidades de vientos bajas predominan la convergencia de brisas, produciéndose más precipitación en las simulaciones sin orografía.
- 2 – El forzamiento orográfico como mecanismo de disparo aparece por encima de cierto umbral de viento; estos forzamientos dependerán de las condiciones de inestabilidad de partida, altura de las montañas, intensidad del viento y su ángulo de incidencia con la orografía.