

Urban flood events in Portugal

INLINE meeting, JRC, Ispra, 24-25 Feb 2026

v21/02/2026

2017

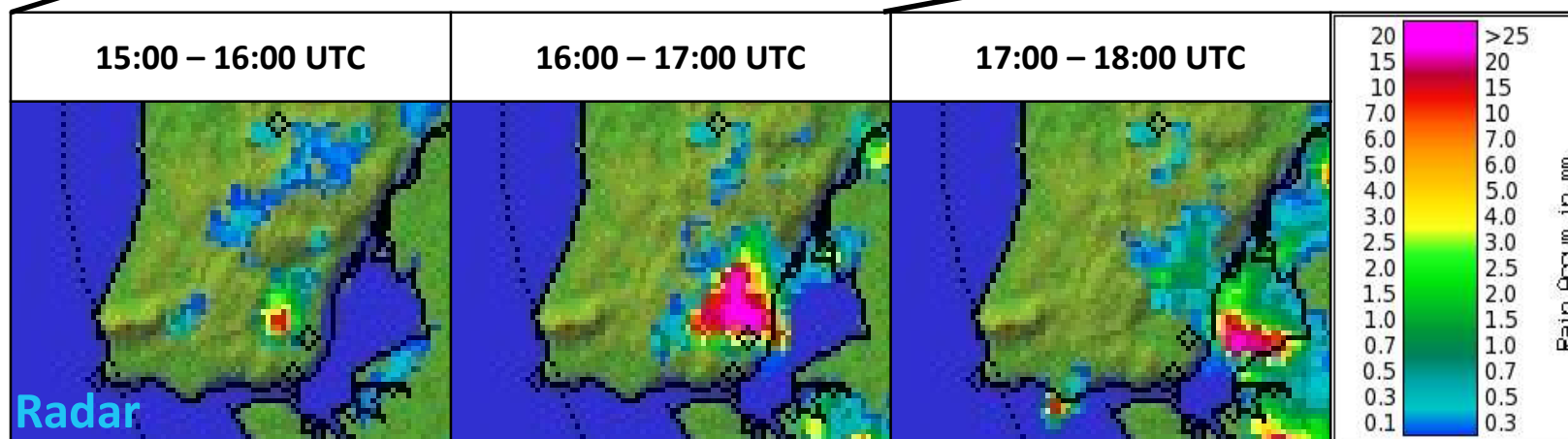
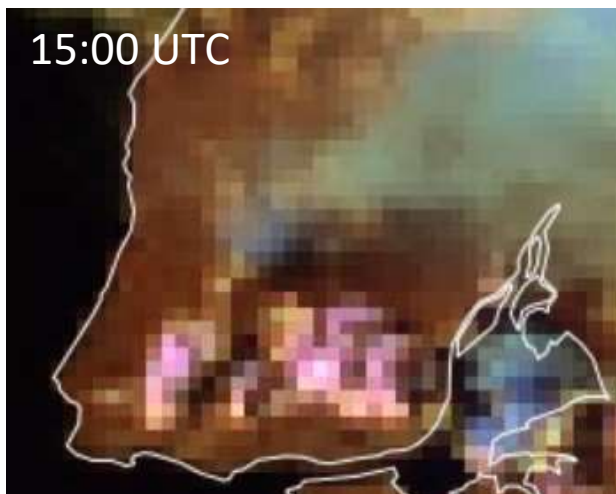
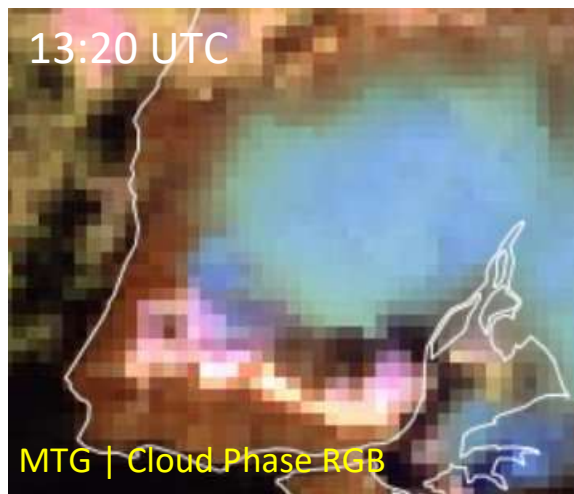
IPMA

1. Setting the analysis modus operandi with the urban flood reference event on **12/04/2025 in Odivelas and Loures** (precipitation, occurrences and INLINE products)
2. Identification of other **recent urban flood events in Oct-Nov 2025** to which the same analysis is to be performed
3. Next Steps
4. Experience on Notifications and proposal for **visualizing** products in a nowcasting environment

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Urban flood in Odivelas/Loures – 12 Apr 2025

Two quasi-stationary convective cells



Urban flood in Odivelas/Loures – 12 Apr 2025

INLINE Urban Flooding products

Layers/Products	Predicted?	Occurred?	Precipitation Accumulation	Update Frequency	Step Frequency	Group
Seamless precipitation accumulation	Y *	Y	6h/18h/ 24h/72h	1h	6h/18h/ 24h/72h	Flash flood forecast summary (0-120h)
Hourly precipitation 80th percentile	N	Y	1h	1h	1h	Animated flash flood nowcasting
Radar reflectivity OPERA	Y *	Y	-	15 min	15 min	Storm Impact
	N	Y	-	1h	1h	Animated flash flood nowcasting
Hourly precipitaton - radar nowcasting	Y *	Y	1h	15 min	15 min	Storm Impact
	N	Y	1h	1h	1h	Animated flash flood nowcasting
Precipitation Hazard	Y	Y	1h	15 min	15 min	Storm Impact
	N	Y	1h	1h	1h	Animated flash flood nowcasting
Precipitation Risk	Y	Y	1h	15 min	15 min	Storm Impact
	N	Y	1h	1h	1h	Animated flash flood nowcasting
Storm Risk	Y	Y	6h/18h/ 24h/72h	1h	6h/18h/ 24h/72h	Flash flood forecast summary (0-120h)
Pluvial flood hazard in urban areas	Y	Y	1h	15 min	15 min	Storm Impact
	Y	Y	1h	1h	1h	Animated flash flood nowcasting

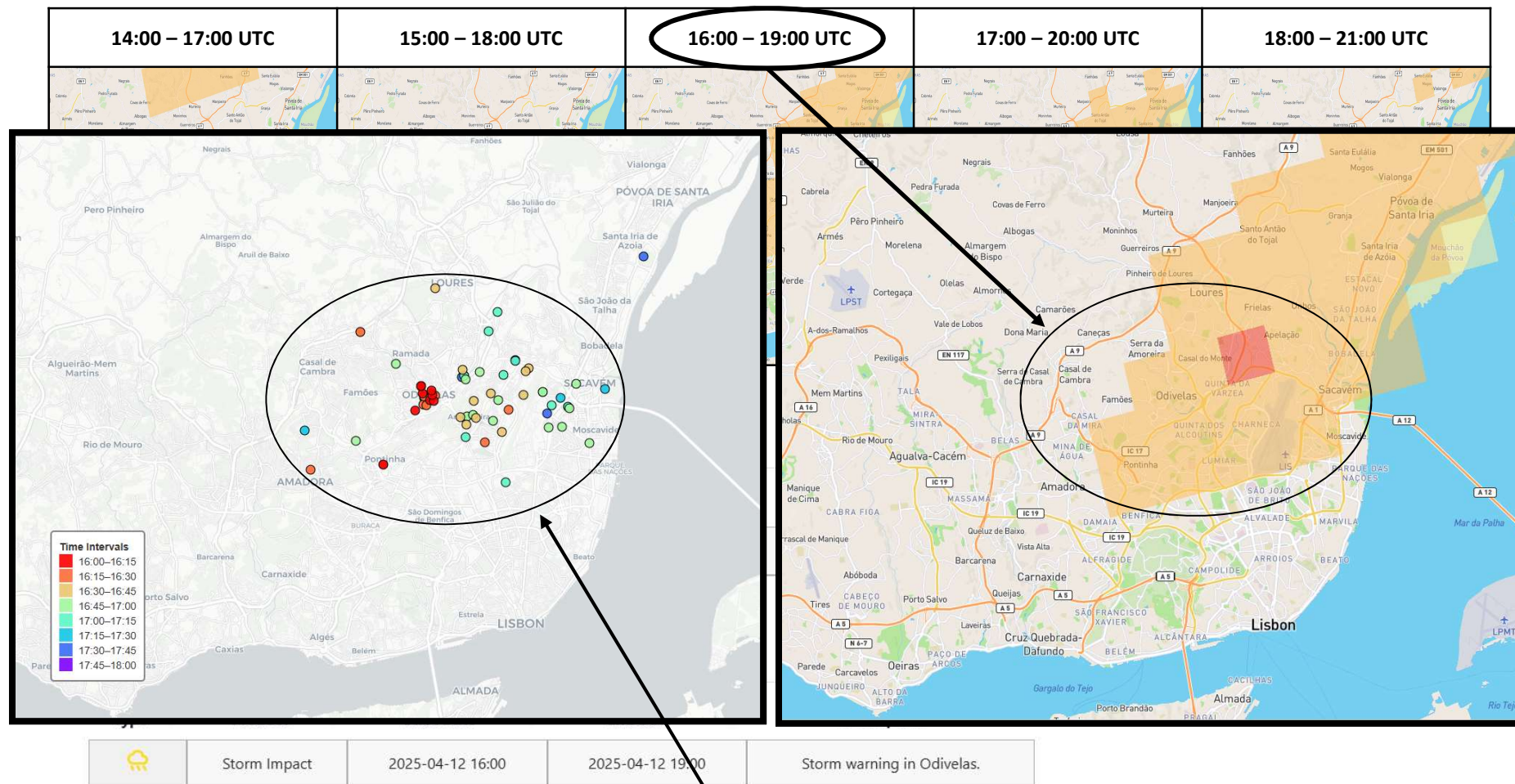
Layer type

	Meteorological layers
	Flash flood impact layers
	Storm impact layers
	EFAS

Results Comparison

	N/Y
	Y/Y

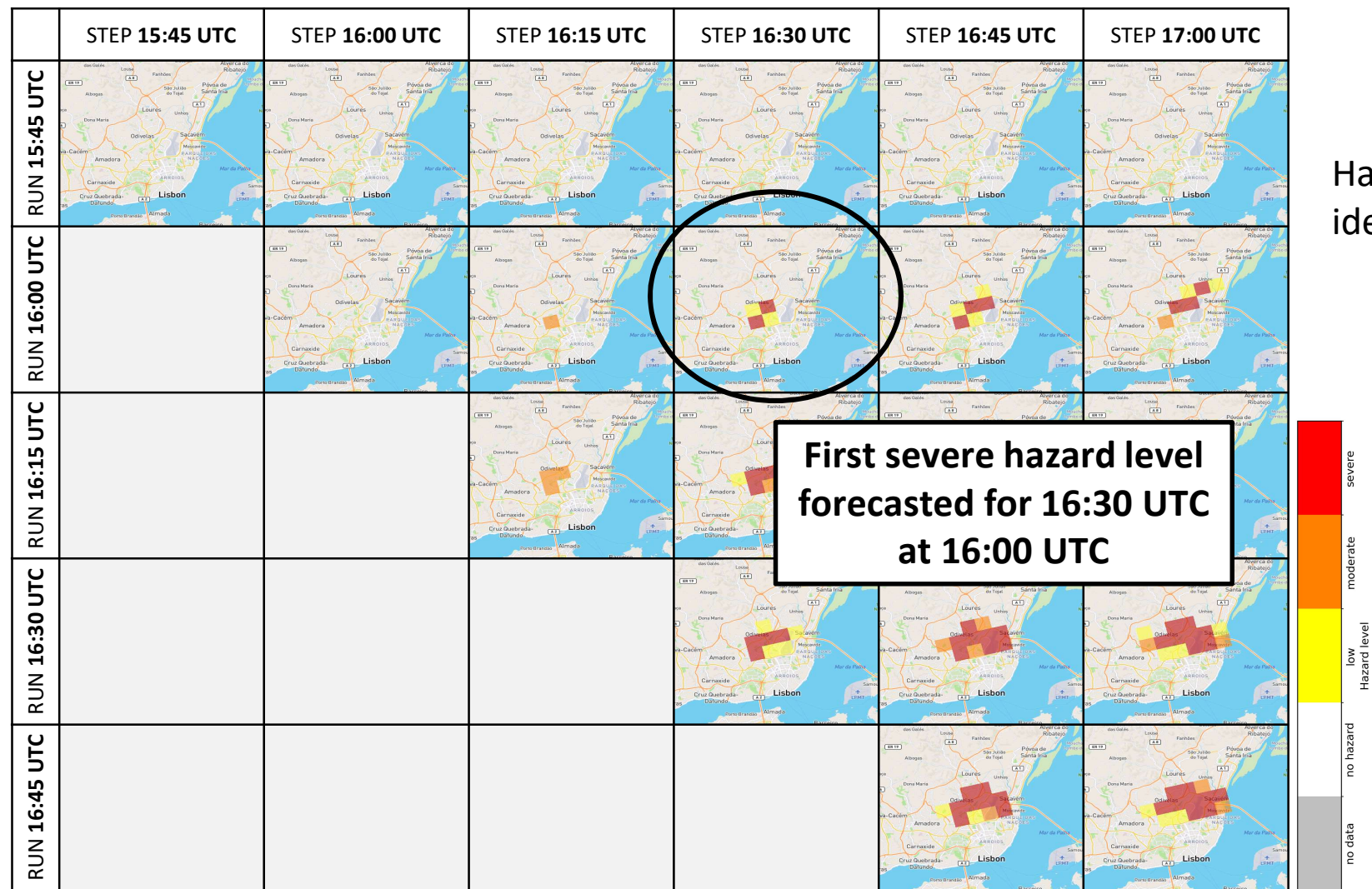
* There's a signal but there's underestimation / smoothing / advection



Flood Reports (16-18 UTC)

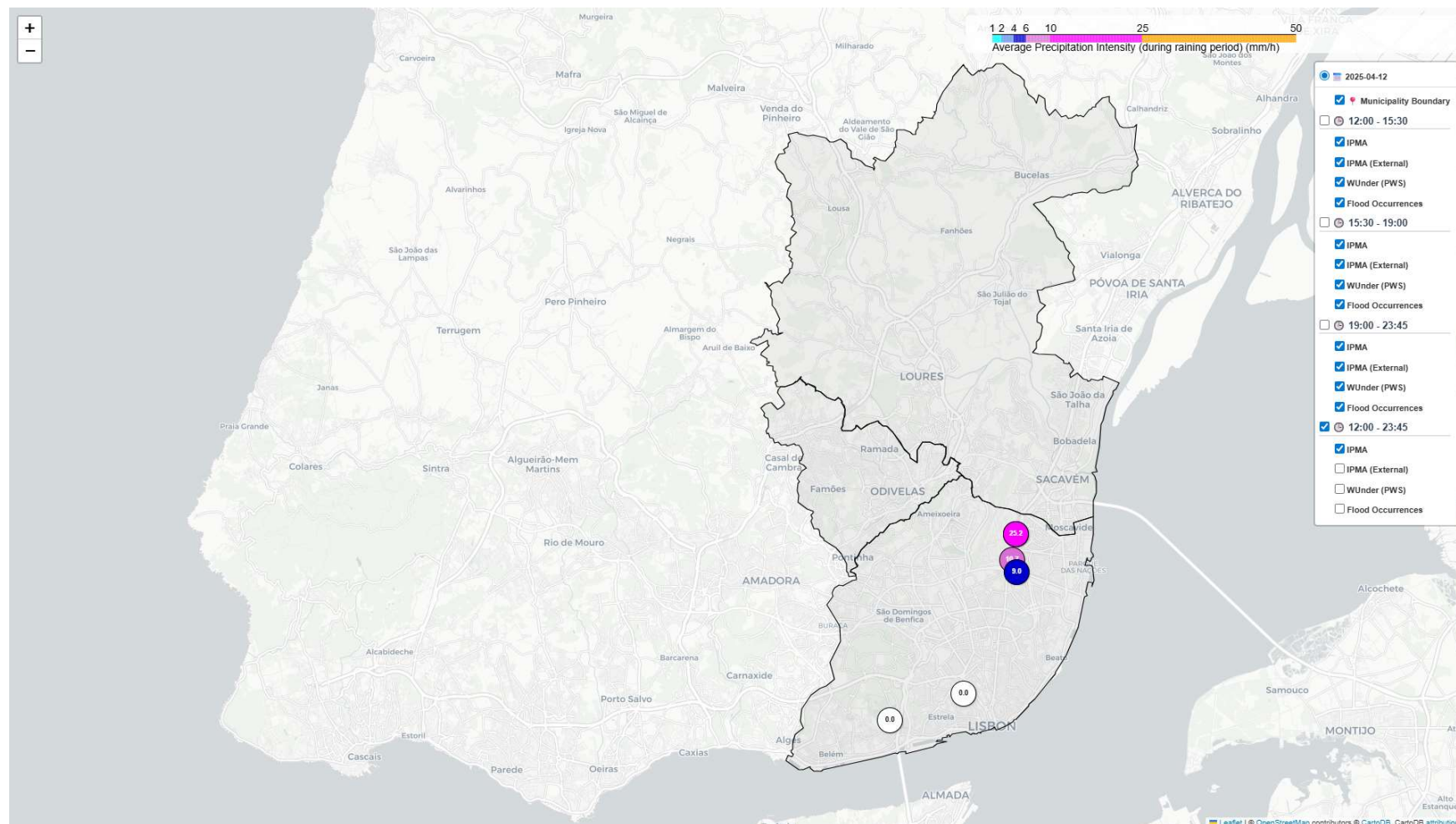
INLINE – Pluvial Flood Hazard in Urban Areas

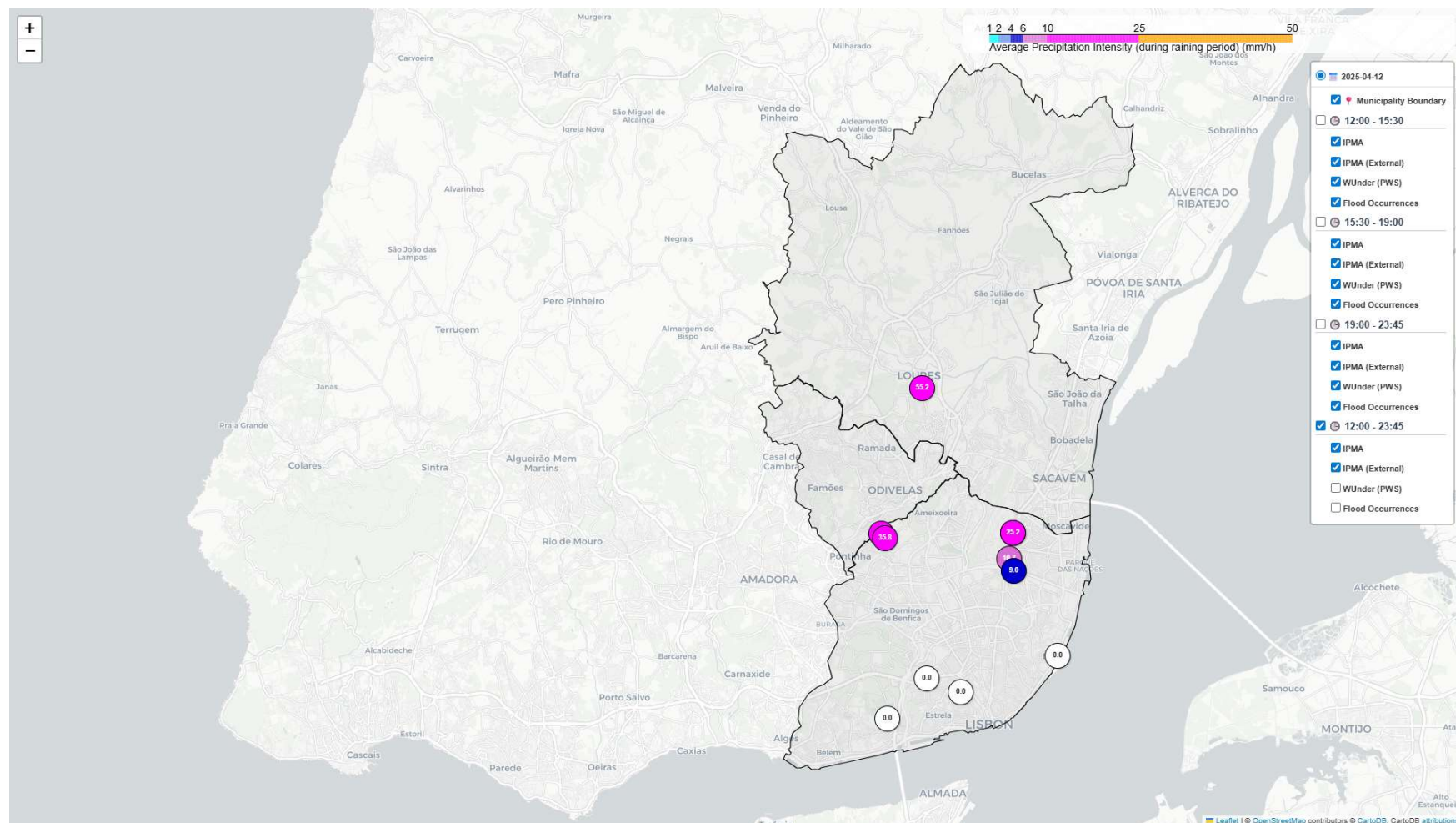
[good performance]





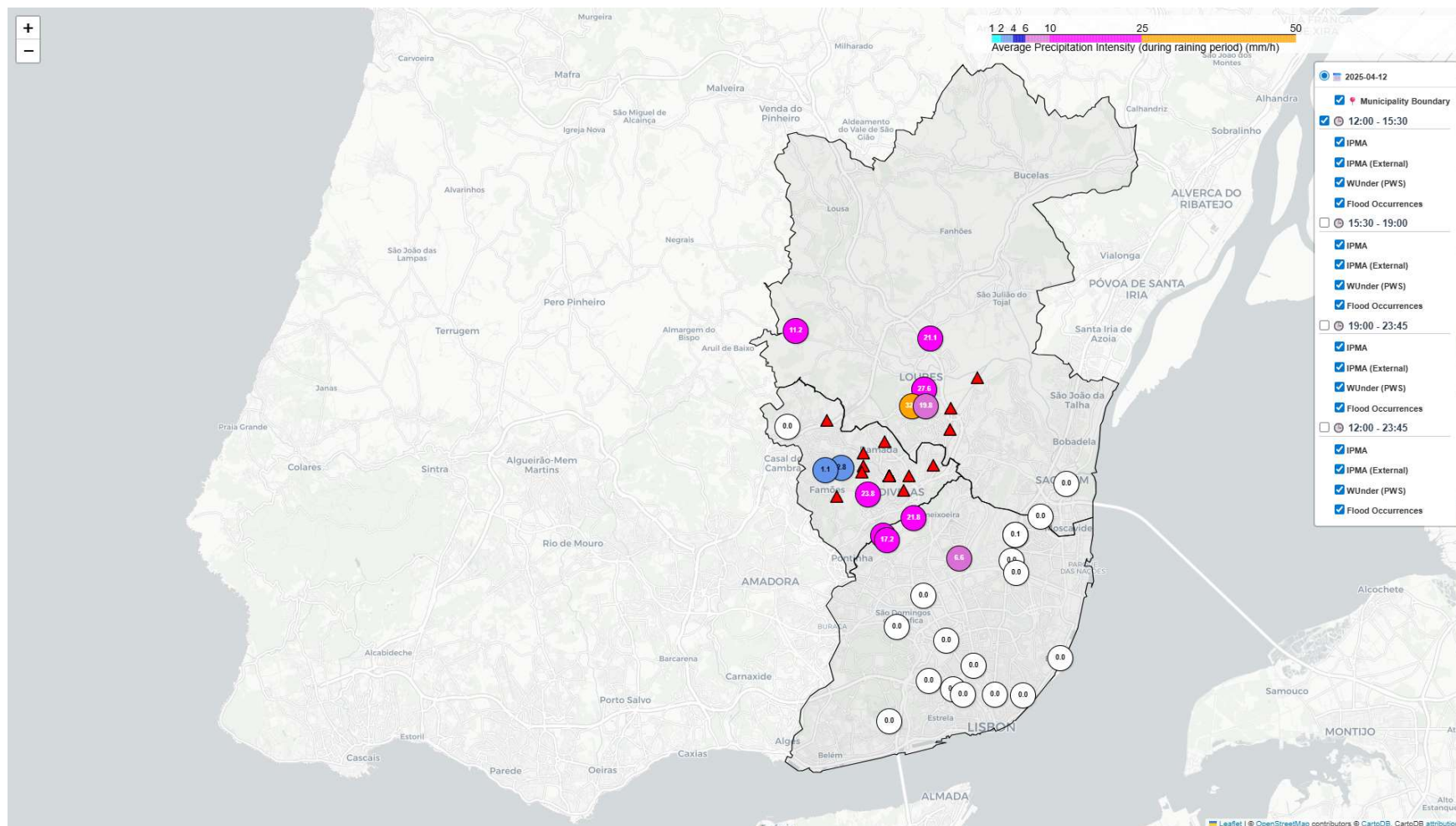
Flood Reports (16-18 UTC)



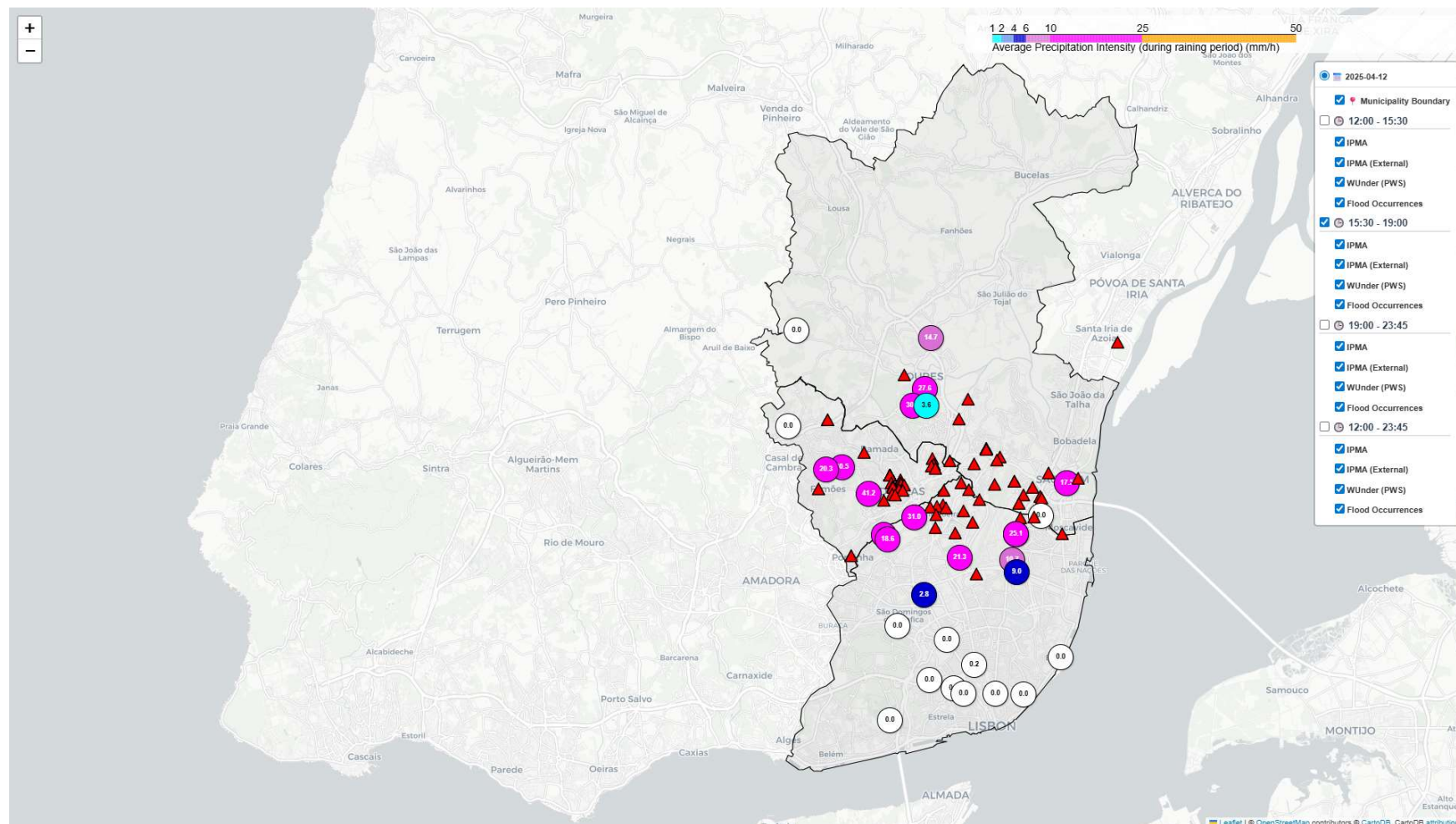




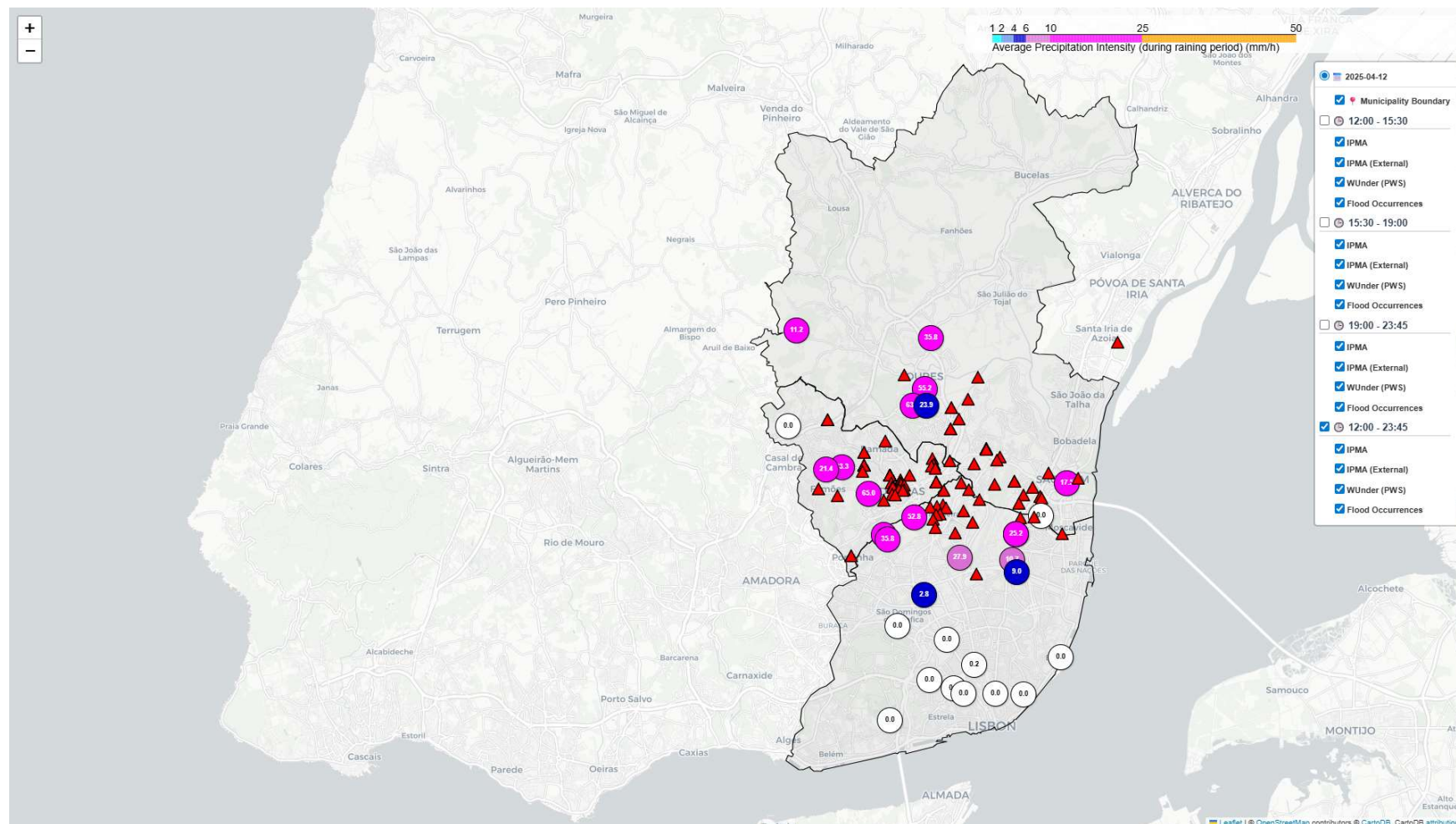
FLOOD OCCURRENCES: FIRST EVENT



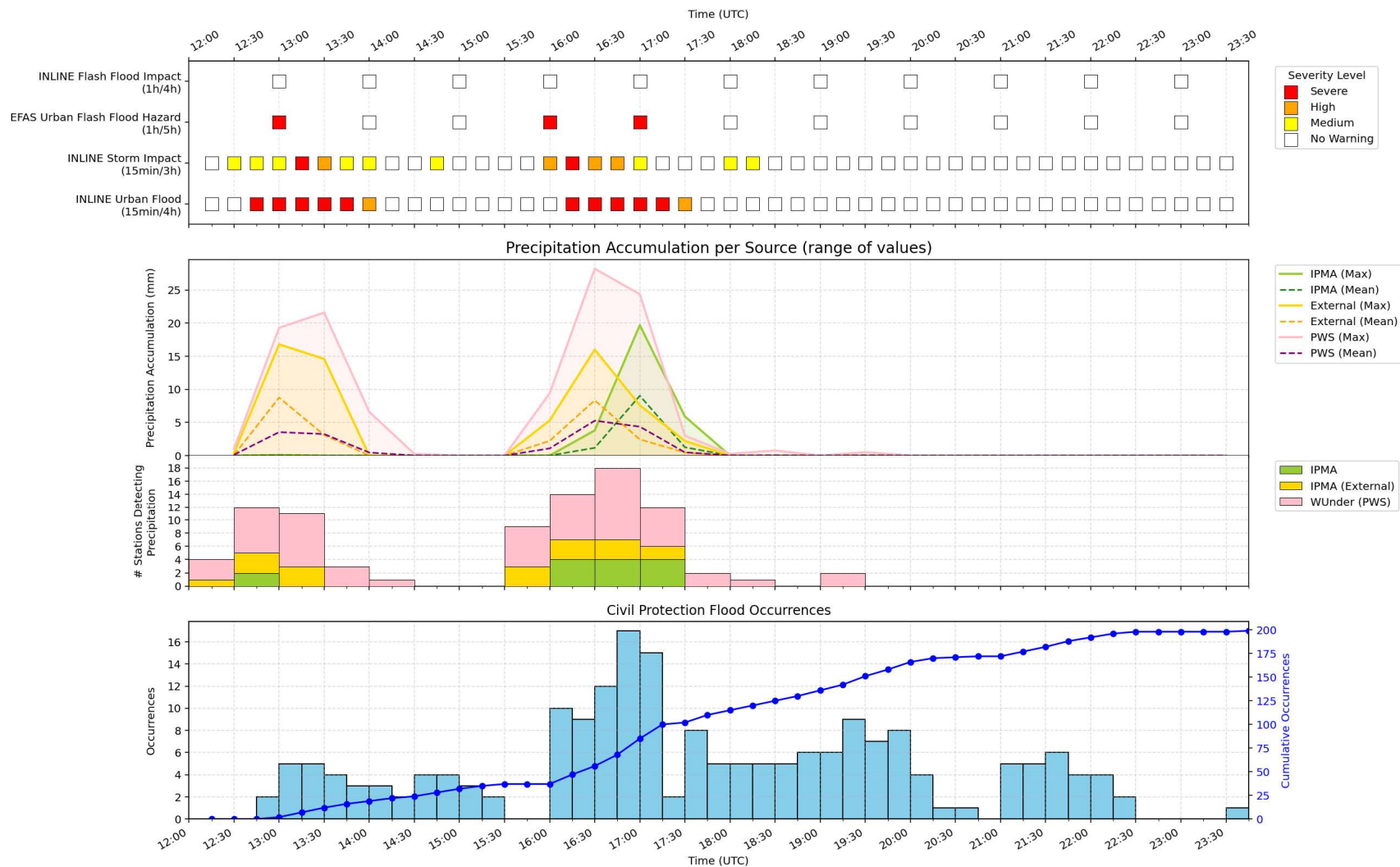
FLOOD OCCURRENCES: SECOND EVENT



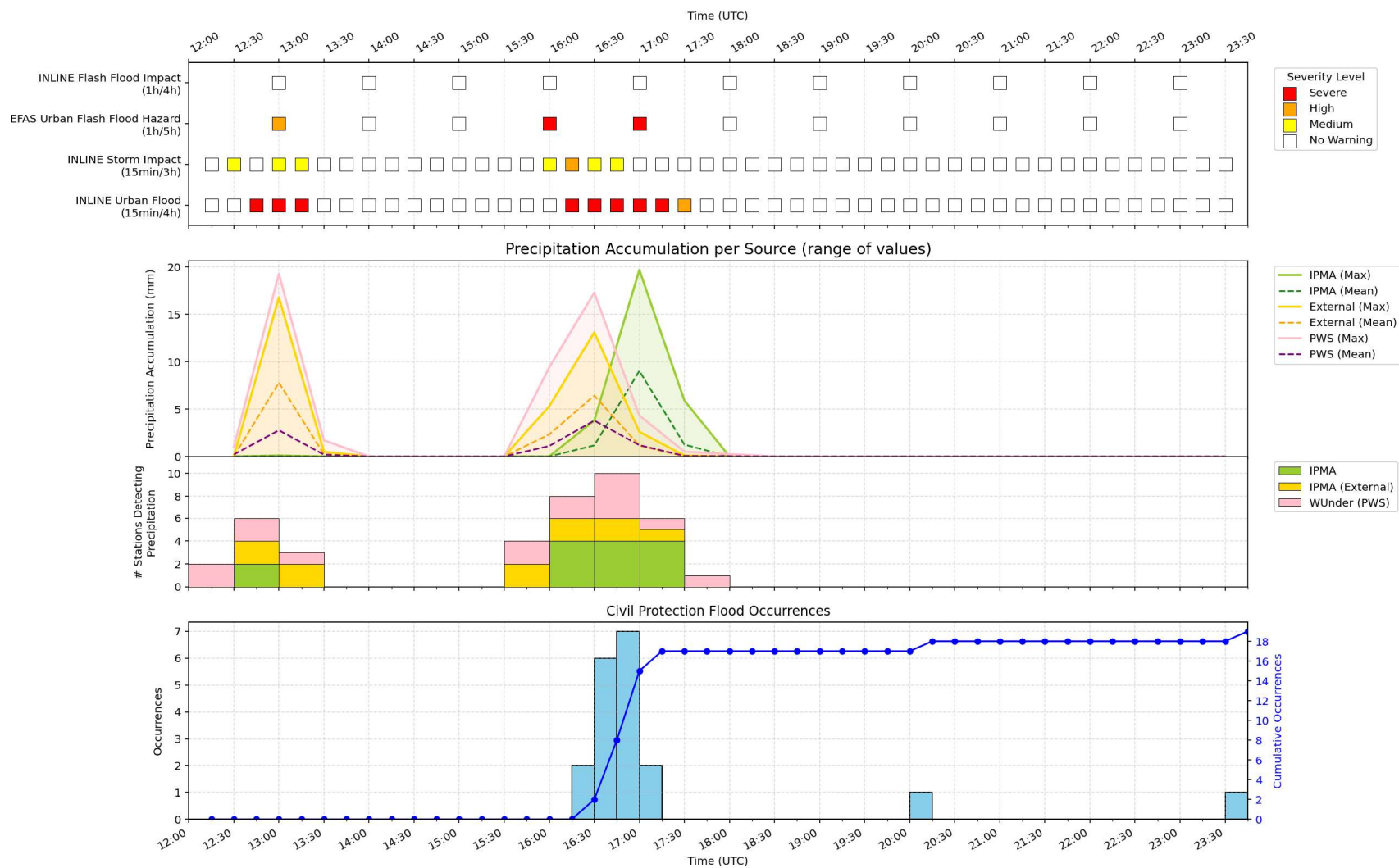
FLOOD OCCURRENCES: FULL PERIOD



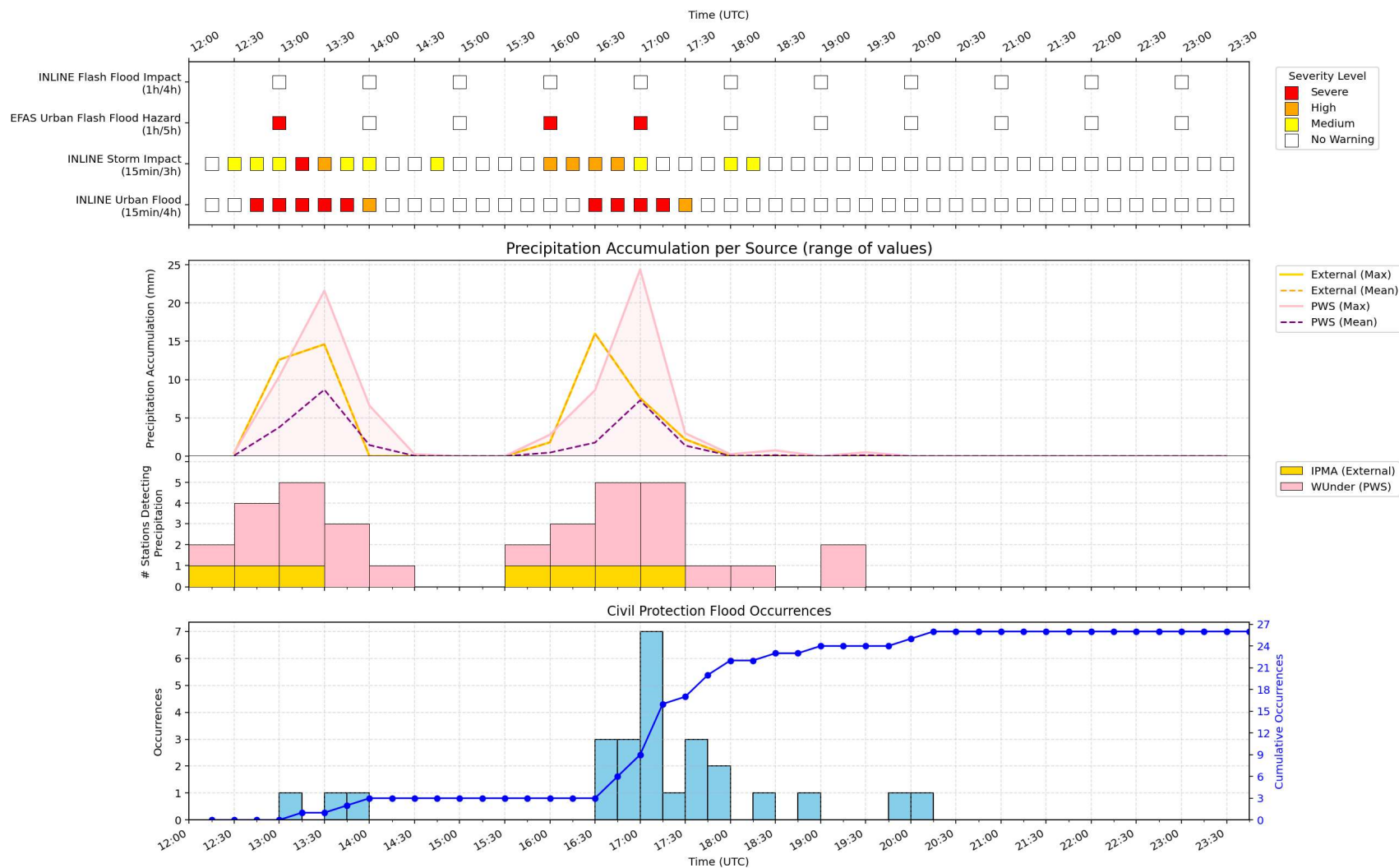
ODIVELAS - LOURES - LISBOA | 2025-04-12 | 12:00 - 23:45



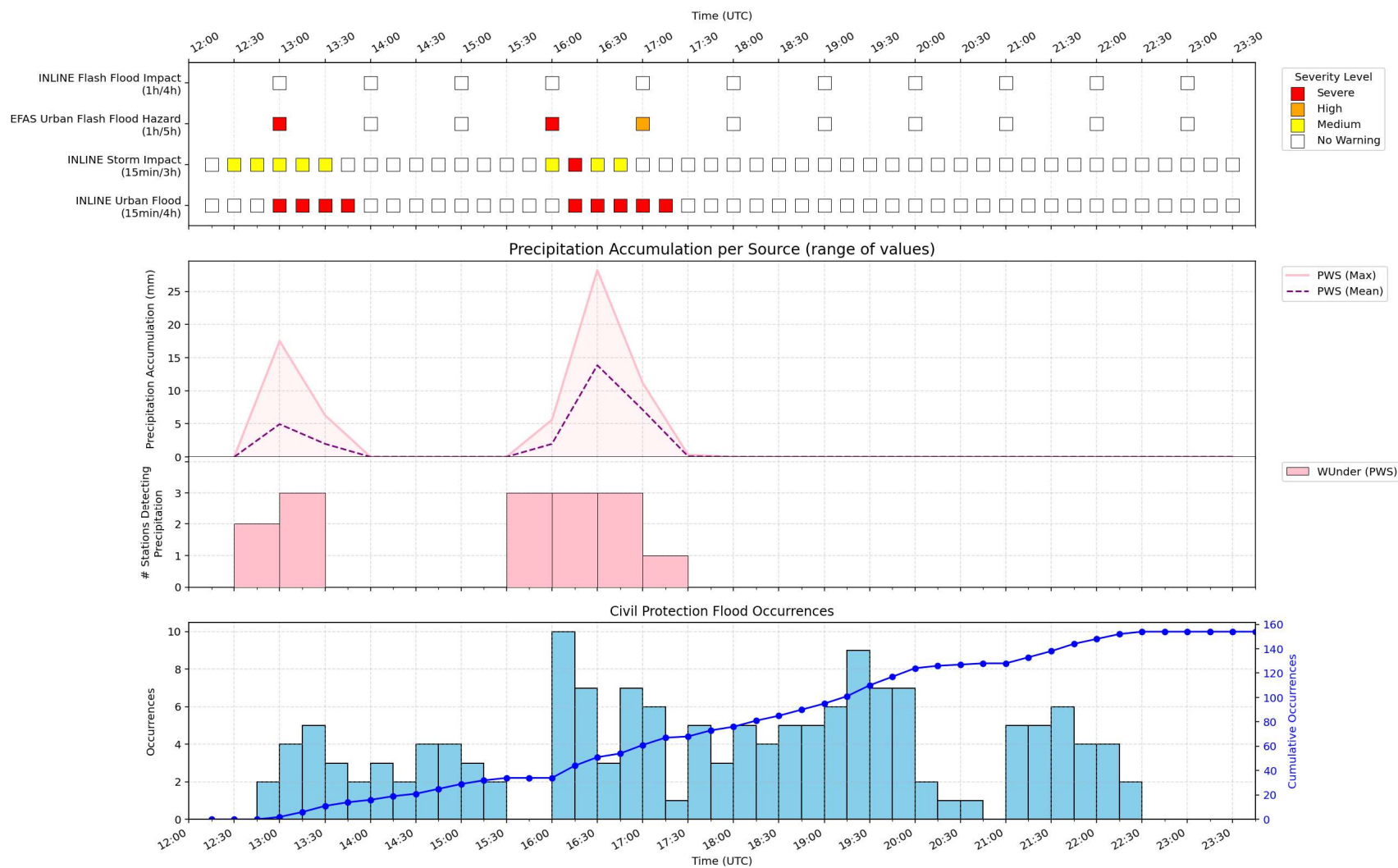
LISBOA | 2025-04-12 | 12:00 - 23:45



LOURES | 2025-04-12 | 12:00 - 23:45



ODIVELAS | 2025-04-12 | 12:00 - 23:45



1. Setting the analysis modus operandi with the urban flood reference event on **12/04/2025 in Odivelas and Loures** (precipitation, occurrences and INLINE products)
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Criteria to choose new urban flood events during Oct – Nov 2025

- Extreme urban flood events **in major cities**
 - Coimbra – 25 Oct 2025
 - Lisbon area – 28 Oct 2025
 - Faro – 29 Oct 2025
 - Porto – 31 Oct 2025
- **Not so extreme but frequent** urban flood events (for reference)
 - 5 Nov 2025
- Events with **very local high precipitation amounts** in AWS networks (to explore radar-udometer and/or external networks impact)
 - Algarve – 12/13 Nov 2025
 - Tejo valley – 13 Nov 2025

Extreme urban flood events in major cities

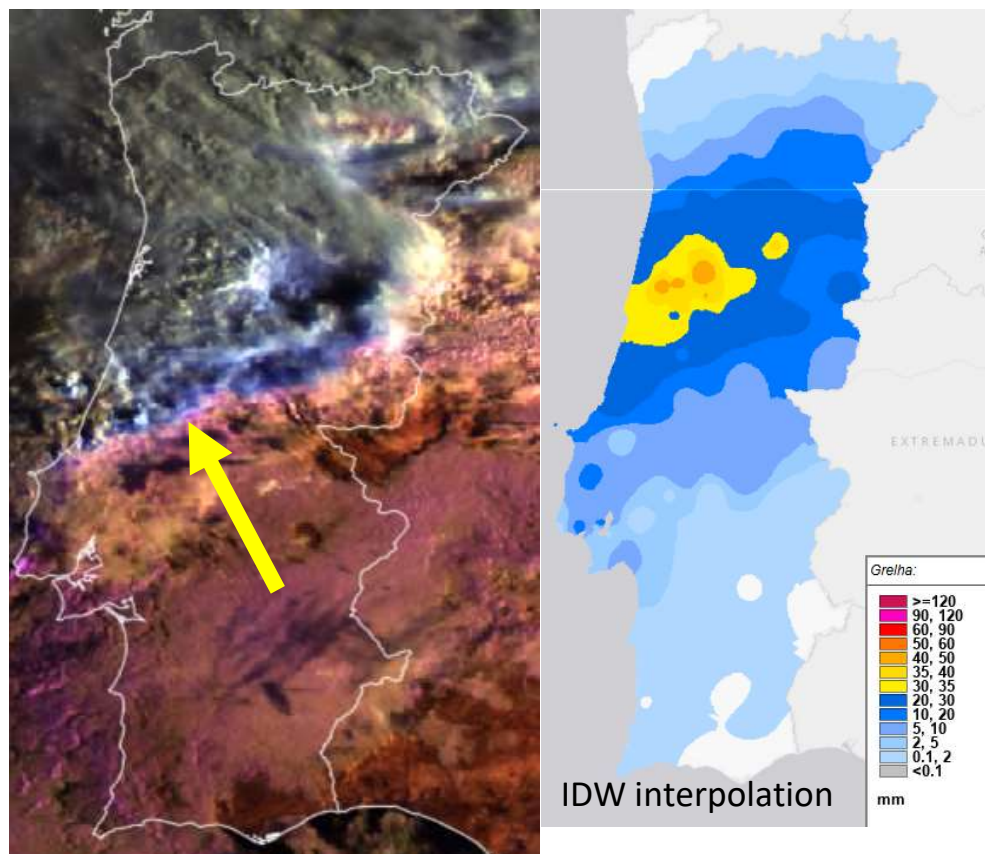
Urban flood in **Coimbra** – 25 Oct 2025 (morning)

Persistent and heavy precipitation in tropical air mass

MTG Cloud Phase RGB
25/10/2025, 08:00 UTC

IPMA AWS (24h Prec.)

IPMA and external AWS (hourly Prec.)

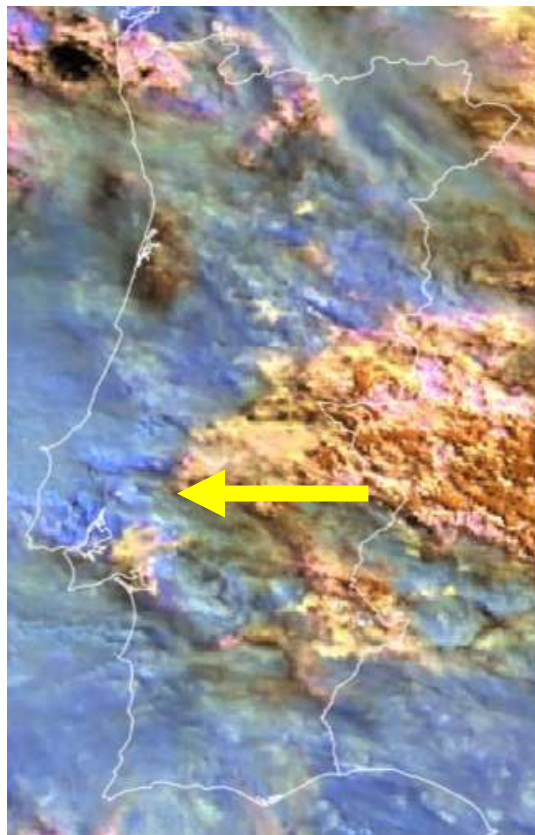


ESTAÇÃO	07	08
COIMBRA / AERÓDROMO (171 m)	5.8	16.8
COIMBRA / ASTRONÓMICO (117 m) - [Univ.Coimbra]		
COIMBRA / BENCANTA (27 m)	8.9	16.6
COIMBRA/GEOFÍSICO (141 m) - [Univ.Coimbra]	7.2	23.3
COIMBRA-MATA DE SÃO PEDRO (264 m) - [CIM Coimbra]	9.8	8.4
PENACOVA-HOMBRES (141 m) - [CIM Coimbra]	0.0	27.5
VILA NOVA DE POIARES-ZONA INDUSTRIAL (132 m) - [CIM Coimbra]	0.0	22.4
LOUSÃ / AERÓDROMO (194 m)	0.0	15.9
LOUSÃ/CANDAL (621 m)	0.0	12.8
LOUSÃ/TREVIM (1167 m)		
GÓIS-QUINTA DA RIBEIRA (191 m) - [CIM Coimbra]	0.0	16.0
GÓIS/CADAFAZ E COLMEAL (582 m) - [REN]		
PAMPILHOSA DA SERRA (836 m)	0.0	9.1
ARGANIL-AERÓDROMO (233 m) - [CIM Coimbra]	0.0	17.4
OLIVEIRA DO HOSPITAL (304 m) - [CIM Coimbra]	0.0	18.6
CANTANHEDE-FONTE DOM PEDRO (78 m) - [CIM Coimbra]	13.0	8.1
TENTÚGAL (72 m) - [APA]		
SOURE (18 m) - [APA]		
SOURE (524 m) - [CIM Coimbra]	2.0	24.9
FIGUEIRA DA FOZ / VILA VERDE (4 m)	21.0	6.0
DUNAS DE MIRA (14 m)	5.6	6.2

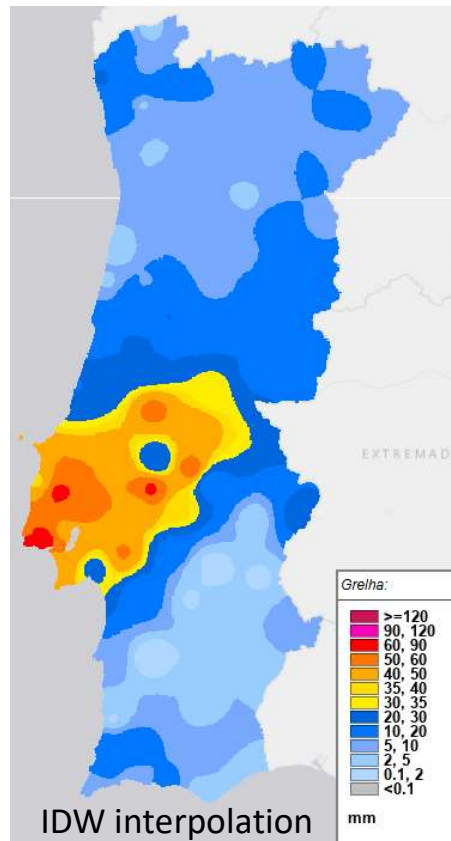
Urban flood in **Lisbon** area – 28 Oct 2025 (afternoon)

Frontal wave linked to low off the coast

MTG Cloud Phase RGB
28/10/2025 – 15:00 UTC



IPMA AWS (24h Prec.)



IPMA and external AWS (hourly Prec.)

ESTACÃO	14	15	16	17
LISBOA/RELÓGIO (114 m)	13.8	0.6	10.9	11.8
EMA TESTE SEDE (95 m)	19.2	1.4	13.5	13.6
EMA TESTE MICROSTEP (95 m)	14.4	1.0	8.7	9.5
EMA CALIBRAÇÃO RADIAÇÃO (95 m)				
LISBOA - PORTELA (103 m)	19.8	1.6	11.0	9.2
LISBOA CARNIDE (118 m) - [CM Lisboa]				
LISBOA/AMOREIRAS (99 m) - [Liceu Francês]	16.0	0.8	12.3	13.6
LISBOA / GEOFÍSICO (77 m)	14.4	0.5	11.4	15.2
LISBOA / TAPADA DA AJUDA (70 m)	16.2	0.8	11.8	14.5
LISBOA/BEATO (4 m) - [CM Lisboa]				
CANEÇAS (277 m) - [APA]	21.3	7.1	10.7	6.9
MAFRA/FUNCHAL (420 m) - [AML]				
MAFRA (176 m) - [AML]				
SOBRAL DA ABELHEIRA (120 m) - [APA]	4.7	3.6	15.9	9.4
MAFRA/ENCARNAÇÃO (81 m) - [AML]				
SANTA CRUZ / AERÓDROMO (41 m)	4.3	4.0	3.2	4.7
TORRES VEDRAS/SÃO JULIÃO (342 m) - [CIM Oeste]				
TORRES VEDRAS / DOIS PORTOS (112 m)	3.9	8.0	8.8	25.0
SOBRAL DE MONTE AGRAÇO (265 m) - [APA]				
ARRUDA DOS VINHOS (123 m)	6.4	17.8	7.2	19.1
ALENQUER/MONTE REDONDO (209 m) - [CIM Oeste]				
PRAGANÇA (183 m) - [APA]				
LOURINHÃ/REGUENGO PEQUENO (188 m) - [CIM Oeste]				
SINTRA/JANAS (174 m) - [AML]				
SINTRA / TAPADA DO MOUCO (416 m)	5.8	24.1	25.9	6.1
SINTRA/PENINHA (487 m) - [AML]				
CABO DA ROCA (141 m)	5.7	20.5	10.7	1.0
CABO RASO / FAROL (8 m)	20.5	8.6	14.2	0.7
CASCAIS/ALCABIDECHES (122 m) - [AML]				
OEIRAS-VILA FRIA (134 m) - [CM Oeiras]	23.8	1.2	20.1	6.7

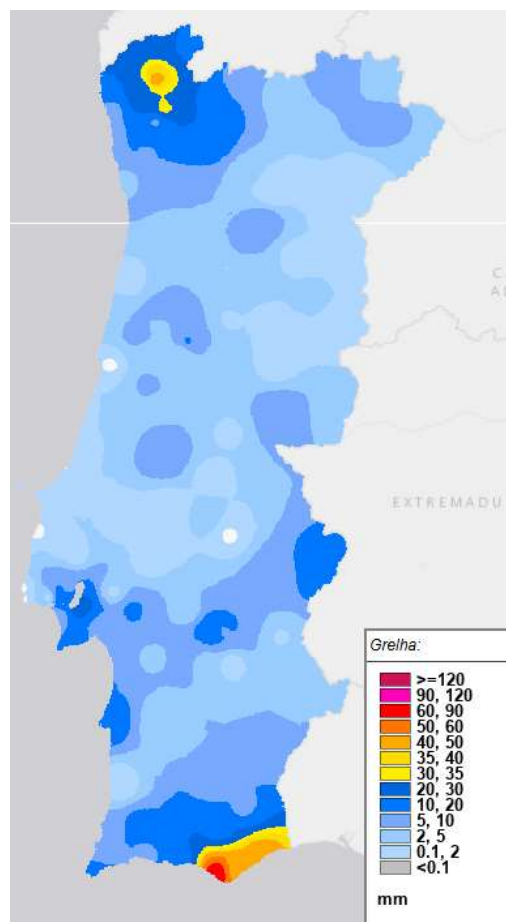
Urban flood in Faro – 29 Oct 2025 (morning)

Convective cell linked to small scale low to the southwest

MTG Cloud Phase RGB
29/10/2025, 08:00 UTC



IPMA AWS (24h Prec.)



IDW interpolation

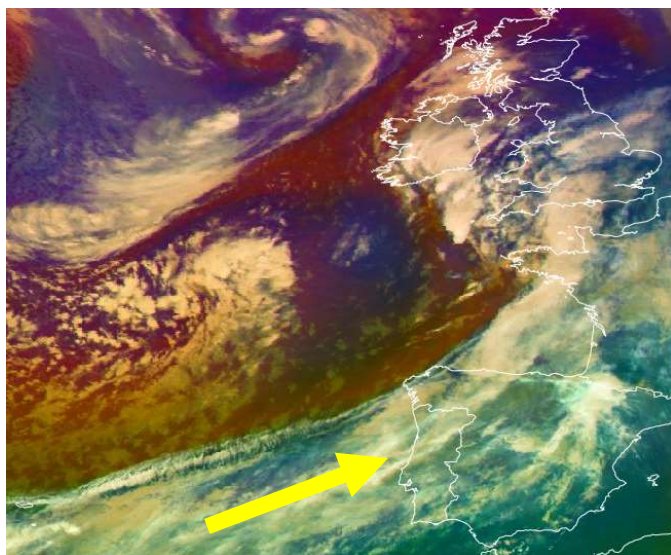
IPMA and external AWS (hourly Prec.)

	07	08
FARO / AEROPORTO (3 m)	30.8	19.5
FARO / PATAÇÃO (13 m) - [CCDR Algarve]		
OLHÃO / EPPO (10 m)	20.4	16.4
TAVIRA / MARAGOTA (57 m) - [CCDR Algarve]		
TAVIRA / LUZ DE TAVIRA (47 m) - [CCDR Algarve]		
TAVIRA / CENTRO EXPERIMENTAÇÃO AGRÁRIA (12 m) - [CCDR Algarve]		
TAVIRA / EEMT (2 m)	4.9	31.4

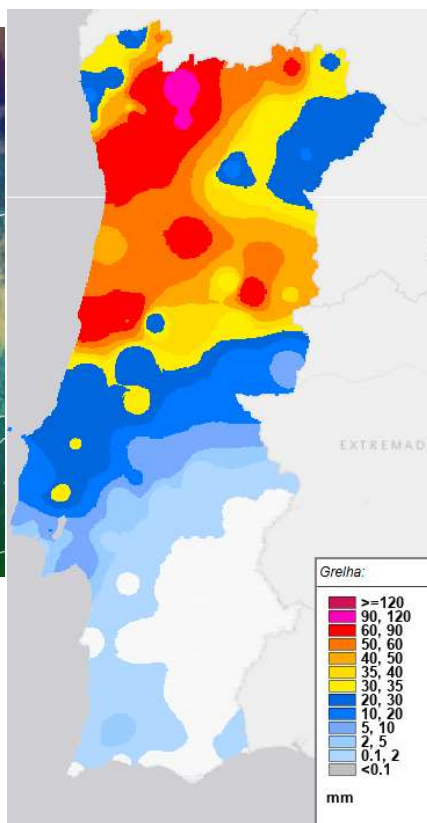
Urban flood in **Porto** – 31 Oct 2025 (morning)

Cold Front with waves linked to low west of Ireland

MSG Airmass RGB
31/10/2025, 08:00 UTC



IPMA AWS (24h Prec.)



IDW interpolation

IPMA and external AWS (hourly Prec.)

	04	05	06	07
PORTO / PEDRAS RUBRAS (68 m)	10.1	14.8	15.6	1.1
PORTO / S.GENS (89 m)	0.1	0.1	0.2	0.3
PORTO / MASSARELOS (74 m)	5.7	13.6	25.3	11.3
PORTO - SERRA DO PILAR (93 m)	4.7	11.1	19.5	7.5
PAREDES/AGUIAR DE SOUSA (135 m) - [REN]				
LUZIM (287 m)	1.2	4.0	9.9	4.4
PAÇOS DE FERREIRA (288 m)	4.0	6.5	11.3	16.9
AMARANTE (146 m) - [APA]				

Impacts:

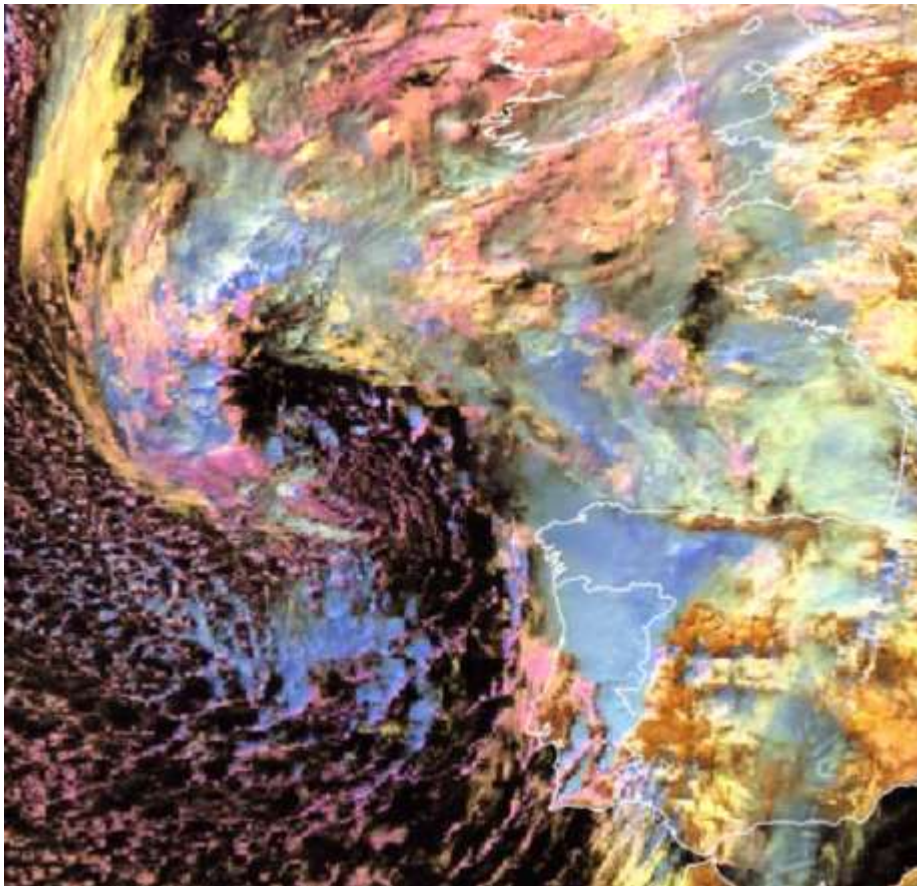
- 5-7 UTC
- Porto area of VCI/Ramalde

Not so extreme but frequent
urban flood events
(for reference)

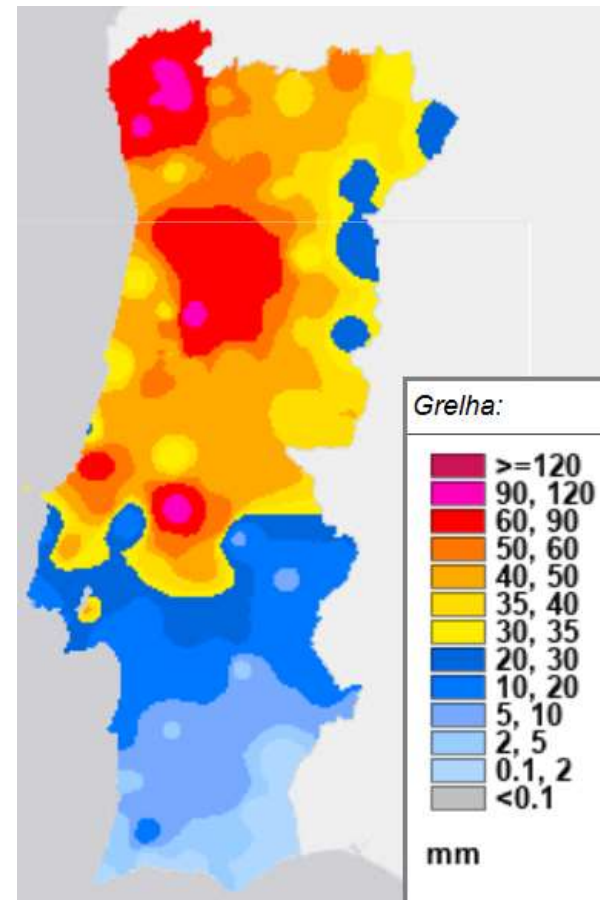
Not so extreme but frequent urban floods

5 Nov 2025 (reference)

MTG Cloud Phase RGB
05/11/2025 – 10:40 UTC



IPMA AWS (24h Prec.)



IDW interpolation

Events with very local high precipitation amounts in AWS networks

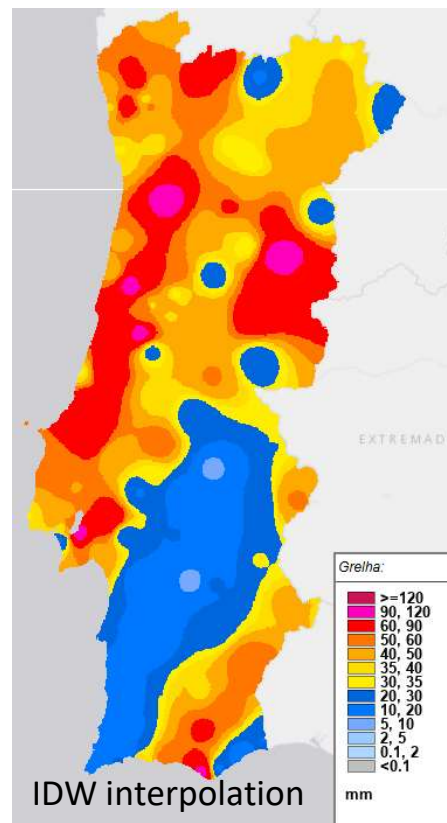
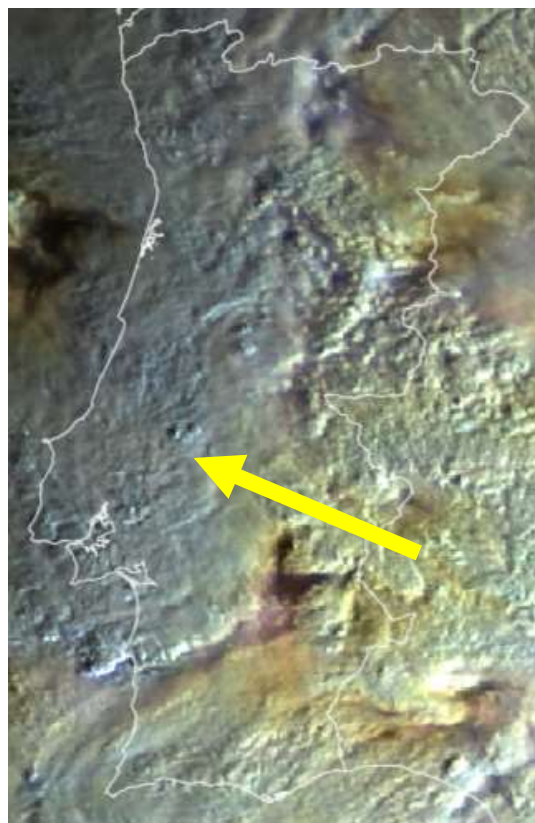
Urban floods - Tejo valley – 13 Nov 2025 (morning)

Instability lines linked to storm Claudia

MTG Cloud Phase RGB
13/11/2025 – 08:00 UTC

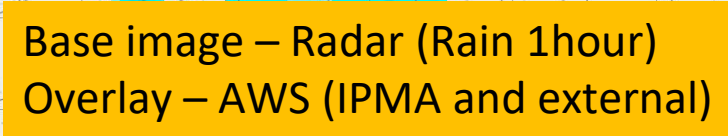
IPMA AWS (24h Prec.)

IPMA and external AWS (hourly Prec.)



ESTACÃO	06	07	08	09	10
SANTARÉM / FONTE BOA EST. ZOOTÉCNICA (72 m)	10.3	4.3	3.8	4.0	2.7
SALVATERRA DE MAGOS/PAUL (3 m) - [ARBVS]	18.8	17.2	15.6	11.2	5.0
SALVATERRA DE MAGOS/BARRAGEM (16 m) - [ARBVS]	18.0	33.8	19.2	19.2	2.6
BARRAGEM DE MAGOS (43 m) - [APA]					
BENAVENTE/BARROSA (18 m) - [ARBVS]	31.8	95.8	11.8	24.8	4.6
BENAVENTE/FOROS DE ALMADA (58 m) - [CIM Lezíria do Tejo]					
CAMPO DE TIRO DE ALCOCHETE (41 m)	7.5	10.7	17.9	24.3	2.8
CORUÇHE (18 m) - [ARBVS]	0.4	0.0	2.6	9.2	3.2
CORUÇHE / ESTAÇÃO DE REGADIO (19 m)	0.5	0.0	2.2	7.6	3.7
CORUÇHE (80 m) - [CIM Lezíria do Tejo]					
CORUÇHE/BOAVISTA (106 m) - [CIM Lezíria do Tejo]					
CORUÇHE/COUÇO (40 m) - [ARBVS]	2.4	0.0	0.2	1.2	7.6
CORUÇHE CRUZ DO LEÃO (167 m)	6.5	0.0	1.2	1.1	16.8
HACHUQUEIRA CROU (133 m) - [APA]					
CHAMUSCA/PERNA SECA (148 m) - [ACHAR]					
CHAMUSCA / CHOUTO (115 m)	7.5	18.2	3.4	14.3	8.0
CHOUTO (126 m) - [APA]	4.9	13.7	2.4	10.7	5.5
TOMAR / VALE DONAS (75 m)	1.0	6.5	4.8	5.3	8.0
ABRANTES (181 m) - [CIM Médio Tejo]					
ABRANTES (105 m) - [APA]					
ALVEGA (51 m)	0.2	0.3	0.1	2.1	9.3
MAÇÃO (300 m) - [CM Mação]	0.0	0.0	0.0	0.0	2.6
MAÇÃO/BANDO DOS SANTOS (504 m) - [CIM Médio Tejo]					
MAÇÃO-ENVENDOS (381 m) - [CM Mação]					
ABRANTES/SÃO FACUNDO (235 m) - [CIM Médio Tejo]					
RIO MAIOR / ETAR (53 m)	32.7	4.0	1.9	4.0	0.6

**Hourly amounts > 40 mm
from 2 external AWS to be evaluated**



| B/B - Benavente / Barrosa (ARBVS)
| C/C – Chamusca / Chouto (IPMA)

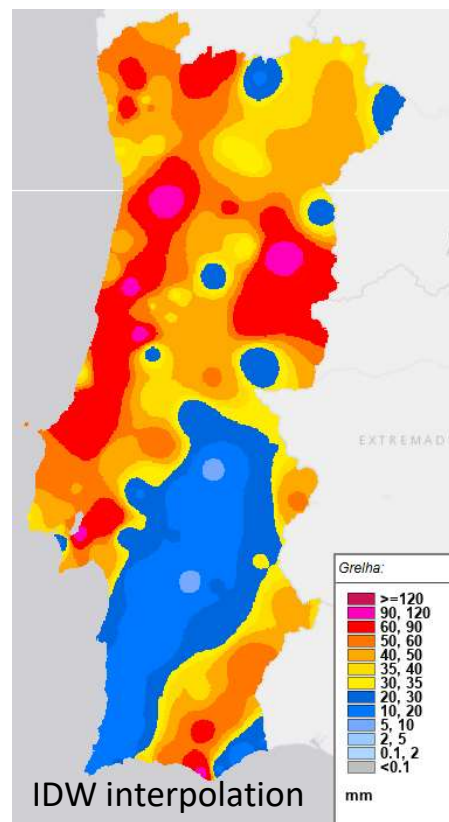
Urban floods – Setúbal – 13 Nov 2025

Instability lines related to storm Claudia

MTG Cloud Phase RGB
13/11/2025 – 08:00 UTC

IPMA AWS (24h Prec.)

IPMA and external AWS (hourly Prec.)

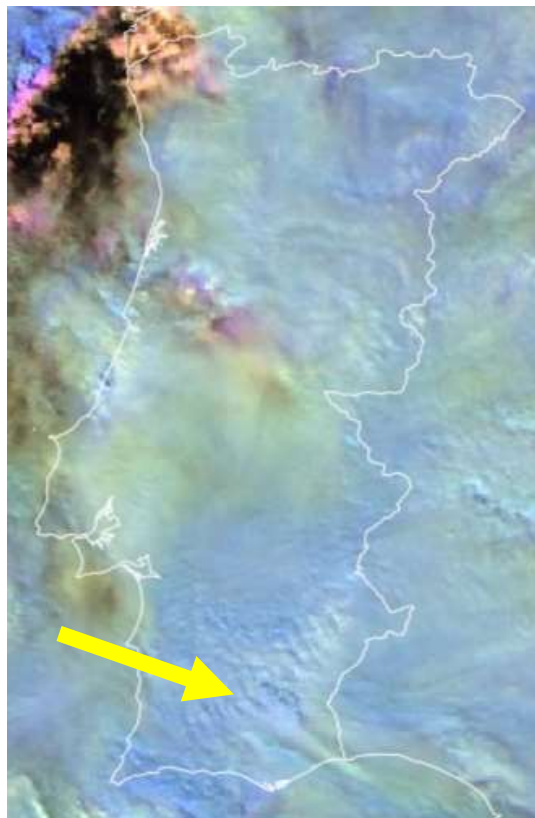


	05	06	07	08	09
SETÚBAL / ESTAÇÃO DE FRUTICULTURA (19 m)	3.5	1.0	2.1	18.5	15.7
ALMADA/PRAIA DA RAINHA (6 m)	0.5	1.6	2.9	2.3	1.9
MONTE DA CAPARICA (96 m) - [APA]	10.3	3.3	3.3	0.9	1.0
BARREIRO / LAVRADIO (7 m)	15.5	22.9	27.0	8.7	2.4
PEGÕES (76 m)	0.8	0.6	0.0	0.2	12.0
CANHA (52 m) - [APA]					
MONTEVIL (24 m) - [APA]	0.2	0.0	0.0	0.0	10.0
ALCÁÇER DO SAL/BARROSINHA (27 m)	1.2	0.1	0.0	0.0	2.5
GRÂNDOLA (95 m) - [APA]	0.7	0.0	0.0	0.3	0.2
ALVALADE (47 m)	0.1	0.1	0.9	0.0	0.1
ALVALADE/PERÍMETRO DE REGA DE CAMPILHAS E ALTO SADO (78 m) - [COTR]					
SINES/PORTO COVO/BAÍA (0 m)					
SINES / MONTE CHÃOS (98 m)	0.0	0.0	0.0	0.0	14.8

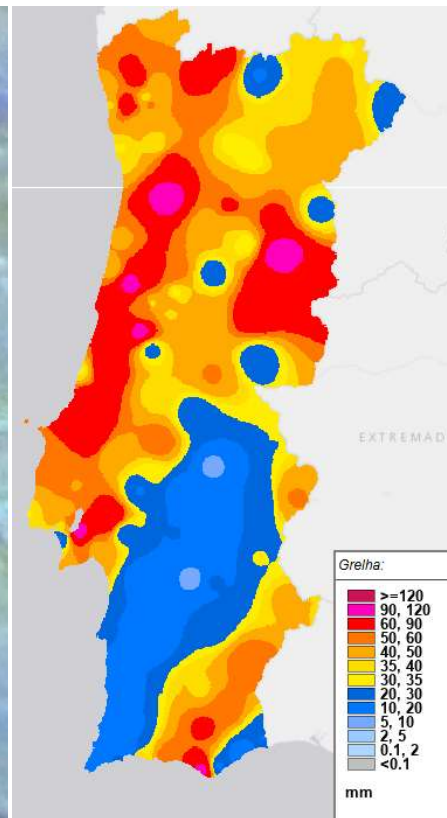
Urban floods – Algarve – 13 Nov 2025

Instability lines related to storm Claudia

MTG Cloud Phase RGB
13/11/2025 – 13:00 UTC



IPMA AWS (24h Prec.)

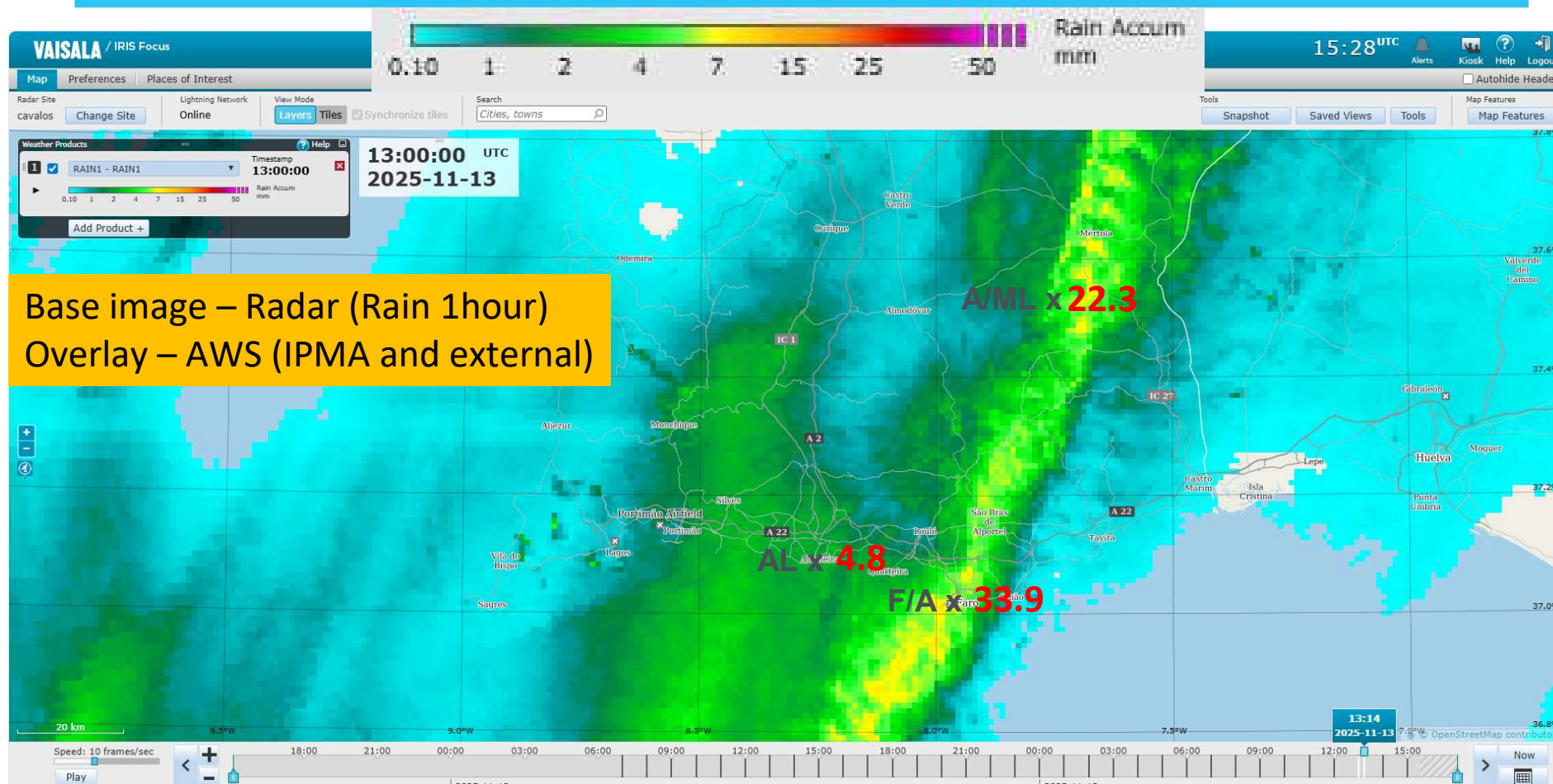


IPMA and external AWS (hourly Prec.)

	11	12	13	14	15	16	17	18	19	20
FARO / AEROPORTO (3 m)	0.0	25.0	33.9	28.7	2.0	1.1	0.0	0.0	0.0	0.1
FARO / PATACÃO (13 m) - [CCDR Algarve]										
OLHÃO / EPPO (10 m)	0.0	3.5	1.0	3.6	9.6	0.4	0.0	0.0	0.0	0.6
TAVIRA / EEMT (2 m)	0.0	0.2	0.3	0.2	4.0	6.3	0.0	0.0	0.0	0.1
CASTRO MARIM / RESERVA NACIONAL DO SAPAL (5 m)	0.0	0.4	0.0	0.1	4.0	2.3	0.1	0.0	0.0	0.0
VILA REAL DE SANTO ANTÓNIO (5 m)	0.0	1.1	0.0	0.0	8.3	2.5	0.2	0.0	0.0	0.0
MERCADOR (392 m) - [APA]	1.0	3.3								
ALCOUTIM / MARTIM LONGO (286 m)	1.6	2.5	22.3	13.1	6.8	1.7	0.4	1.3	1.0	4.1
LOULÉ CAVALOS DO CALDEIRÃO (587 m)	4.0	3.7	6.0	8.9	3.6	0.7	0.2	3.6	7.1	18.2
SÃO BRÁS DE ALPORTEL (334 m) - [APA]	0.8	0.7	2.7	26.5	21.6	13.7	5.1	0.1	0.2	0.5
LOULÉ (68 m) - [CM Loulé]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PORTIMÃO-PRAIA DA ROCHA (26 m)	4.1	0.5	3.0	4.2	0.6	0.1	3.9	4.7	0.1	3.0
PORTIMÃO / AERÓDROMO (2 m)	2.6	0.1	1.6	2.9	2.5	0.0	0.7	0.7	0.1	0.3
PORTIMÃO / QUINTA MORGADO TORRE (14 m) - [CCDR Algarve]										
FÓIA (895 m)	2.0	0.3	1.4	3.2	1.8	0.2	3.1	1.1	0.7	0.6
ALJEZUR / SEROMINHEIRO (91 m) - [CCDR Algarve]										
ALJEZUR (12 m)	0.5	0.1	0.4	0.4	0.0	0.0	9.9	0.5	1.7	1.0
ALJEZUR/ARRIFANA/PORTINHO (2 m)										
SAGRES / QUARTEL DA MARINHA (23 m)	0.6	0.0	0.3	0.3	0.0	0.3	36.2	0.3	0.9	0.0
ALBUFEIRA/MARINA (2 m)										
ALBUFEIRA (110 m)	23.1	1.2	4.8	8.1	1.3	0.0	0.1	0.0	13.5	1.4

Urban floods – Algarve – 13 Nov 2025

Instability lines related to storm Claudia



F/A – Faro / Aeroporto

| A/ML - Alcoutim / Martim Longo

| AL - Albufeira

1. Setting the analysis modus operandi with the urban flood reference event on **12/04/2025 in Odivelas and Loures** (precipitation, occurrences and INLINE products)
2. Identification of other **recent urban flood events in Oct-Nov 2025** to which the same analysis is to be performed
3. **Next Steps**
4. Experience on Notifications and proposal for **visualizing** products in a nowcasting environment

- 1) Apply “the 12 Apr 2025 event **methodology**” to the other events during Oct-Nov 2025
- 2) Keep working on the **spatial precipitation pattern** of the events
 - Aggregating AWS, radar and satellite
 - Relating it to the occurrences at a finer spatial level
 - Evaluating the impact of external networks
- 3) Implement a **systematic analysis of INLINE products** (contingency tables):
 - Only for the days of the events
 - At a national level

1. Setting the analysis modus operandi with the urban flood reference event on **12/04/2025 in Odivelas and Loures** (precipitation, occurrences and INLINE products)
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3. Next Steps
4. Experience on Notifications and proposal for **visualizing** products in a nowcasting environment

In more extreme cases lists can be very long and hard to navigate when tasks are piling up

Regions with new information:

The following regions have received new notifications.

- New level 1 notification for Abrantes.
- New level 1 notification for Alcanena.
- New level 1 notification for Alcobça.
- New level 2 notification for Alenquer.
- New level 1 notification for Alfândega da Fé.
- New level 1 notification for Almada.
- New level 1 notification for Almeida.
- New level 1 notification for Arraiolos.
- New level 1 notification for Barrancos.
- New level 1 notification for Barreiro.
- New level 1 notification for Batalha.
- New level 1 notification for Benavente.
- New level 1 notification for Boticas.
- New level 1 notification for Caldas da Rainha.
- New level 1 notification for Carrazeda de Ansiães.
- New level 1 notification for Cascais.
- New level 1 notification for Chamusca.
- New level 1 notification for Chaves.
- New level 1 notification for Constância.
- New level 1 notification for Coruche.
- New level 1 notification for Crato.
- New level 1 notification for Figueira da Foz.
- New level 1 notification for Figueira de Castelo Rodrigo.
- New level 1 notification for Gavião.
- New level 1 notification for Idanha-a-Nova.
- New level 1 notification for Leiria.
- New level 1 notification for Lisboa.

Active notifications:

Detailed list of currently active notifications.

Active notifications:

Detailed list of currently active notifications.

Notification ID	Type	Source	Area	Level	Start time	End time
31833303	Storm	Edera product notification (Storm Impact)	Vouzela	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833284	Storm	Edera product notification (Storm Impact)	Santa Marta de Penaguião	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833285	Storm	Edera product notification (Storm Impact)	Vila Pouca de Aguiar	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833286	Storm	Edera product notification (Storm Impact)	Vila Real	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833287	Storm	Edera product notification (Storm Impact)	Armamar	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833288	Storm	Edera product notification (Storm Impact)	Castro Daire	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833289	Storm	Edera product notification (Storm Impact)	Lamego	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833290	Storm	Edera product notification (Storm Impact)	Molmenta da Beira	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833291	Storm	Edera product notification (Storm Impact)	Mortágua	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833292	Storm	Edera product notification (Storm Impact)	Oliveira de Frades	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833293	Storm	Edera product notification (Storm Impact)	Penalva do Castelo	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833294	Storm	Edera product notification (Storm Impact)	Penedono	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833295	Storm	Edera product notification (Storm Impact)	Santa Comba Dão	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833296	Storm	Edera product notification (Storm Impact)	São João da Pesqueira	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833297	Storm	Edera product notification (Storm Impact)	Sátão	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833298	Storm	Edera product notification (Storm Impact)	Sernacelhe	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833299	Storm	Edera product notification (Storm Impact)	Tabuaço	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833300	Storm	Edera product notification (Storm Impact)	Tarouca	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833301	Storm	Edera product notification (Storm Impact)	Tondela	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833302	Storm	Edera product notification (Storm Impact)	Vila Nova de Paiva	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833160	Storm	Edera product notification (Storm Impact)	Sever do Vouga	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833161	Storm	Edera product notification (Storm Impact)	Ajustrel	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833162	Storm	Edera product notification (Storm Impact)	Alvito	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833163	Storm	Edera product notification (Storm Impact)	Barrancos	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC
31833164	Storm	Edera product notification (Storm Impact)	Beja	1	2026-02-13 11:15 UTC	2026-02-13 14:15 UTC

In more extreme cases maps clearly help, but the list of mails may not be so easily managed

In this day (13/11/2025) there were 9 notifications in ~15 hours



[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 07:58
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 07:58
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 09:49
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 09:49
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 12:45
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 12:45
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 14:52
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 14:52
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 16:47
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 16:47
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 17:50
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 17:50
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 19:43
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 19:43
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 20:49
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 20:49
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 22:46
[INLINE] - Notifications update	• inline@crahi.upc.edu	🕒 13/11/2025, 22:46

Note:

- every mail is duplicated, because it was configured like this

Suggestions:

- User configuration of the maximum/minimum **frequency** for notifications
- User configuration on the **type**, **source** and **level** to include in the notifications
- Support on how to manage images in the mail configuration
(Does not work in **thunderbird**, it works well in **outlook**)

Notifications Update (forecasting time: 2026-02-18 at 21:07 UTC)

This email provides you with the latest INLINE notifications related to your area. For more information you can access our [platform](#).

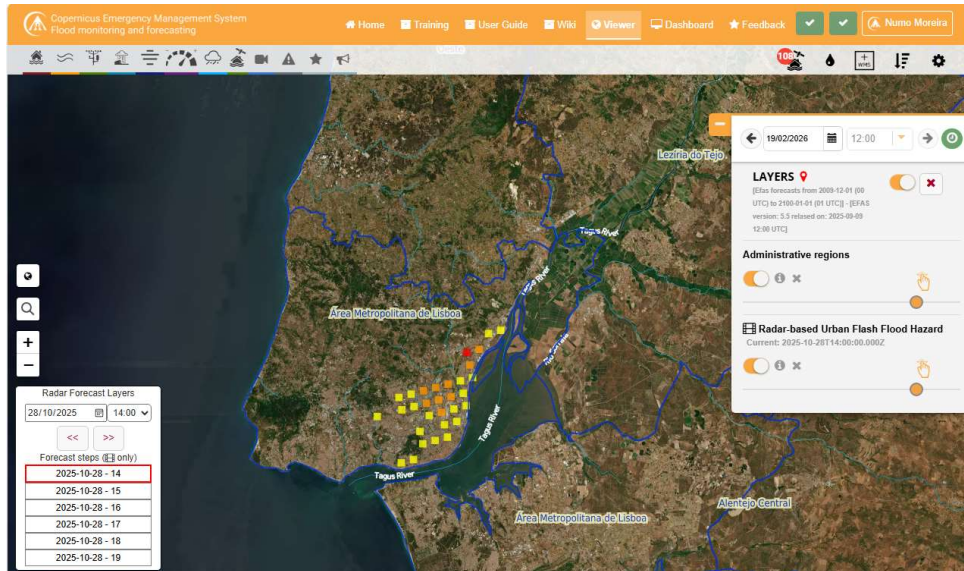
Flash flood impact over sub-catchment (0-6h)	Seamless precipitation accumulation (0-6h)	Official warnings (0-6h) - EUMETNET MeteoAlarm
		
		

Images do appear
in the bottom
of the mail

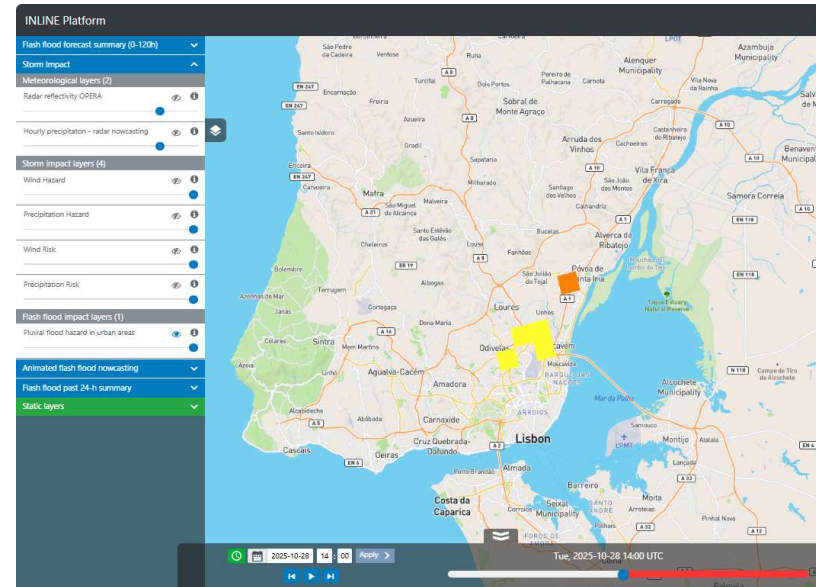
Urban Floods forecasts in viewers

Current nowcasting approach

EFAS: Radar-based Urban Flash Flood Hazard

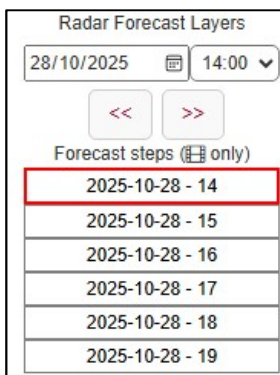


INLINE: Pluvial Flood Hazard in Urban Areas



The tools for nowcasting every

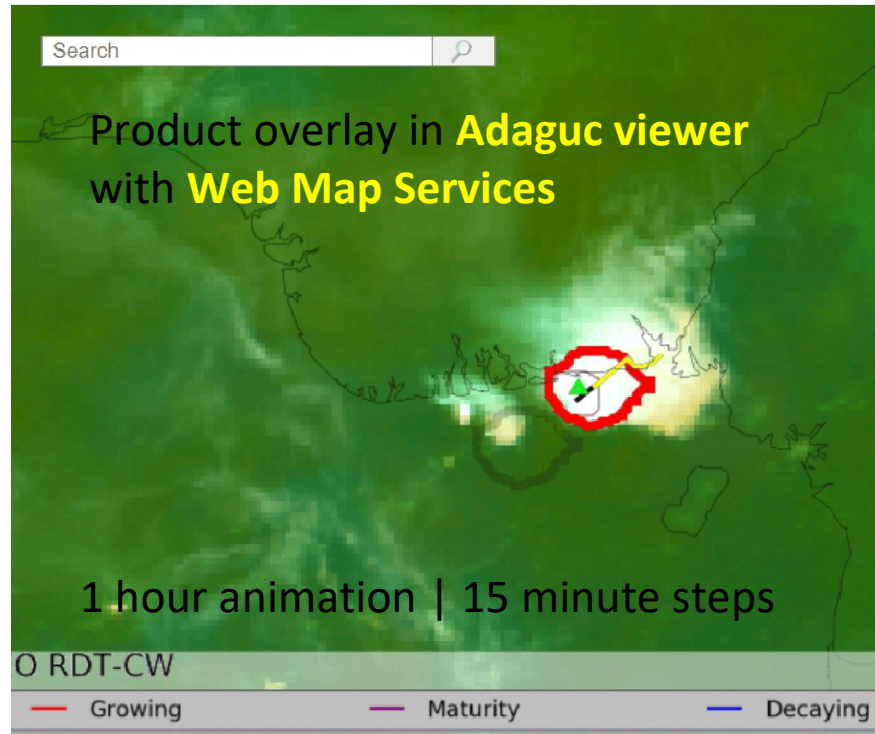
- 60 minutes (EFAS)
- 15 minutes (INLINE)



Are still best suited for, eg.,
forecasting for tomorrow
rather for nowcasting an on-going event

Urban Floods forecasts in viewers

Alternative nowcasting approach



Pop-up box with
convective cell
information
(mouse over)

Feature index (features)	
Coordinates - (lon=7.50; lat=4.47)	
Feature index (RDT)	
- Feature index	1951.000000
- level	0
- #code	006032
- Direction_of_Motion_of_cloud_cell	243.0 degree
- Motion_speed_of_cloud_cell	9.793000221252441 m s ⁻¹
- ObjectType	cell-060
- Status	Maturity
- Time	06:21:43
- severityIntensity	Moderate

MSG Air mass RGB
& SAFNWC Rapid Development Thunderstorm (RDT)

WMS possibility for flood products
updated every 15 minutes?

- Eg. different symbols
for different products

Example of European Severe Weather
Database symbolgy

 Heavy Rain

 Severe Wind

- Eg. different
colours/shadings/outlines
for different time ranges of warning

Thank you!