








## Short Photogallery of the plume monitoring Campaign







All images have to be cited referring to @bomberscat

### ALFARRAS FIRE Catalonia. Date: 27/06/2021






20:14		Fire jumping the road
20:44		Plume developed
20:46		Plume affected by nearby storm indraft
21:20		
22:04		Plume grounded and spot fires

### MARTORELL FIRE, Catalonia. Date: 13/07/2021





16:30		Plume starting penetration stage into unstable mixing layer
16:49		Plume above LCL and cresting PyroCu. The penetration stage is ending
16:55		The flat PyroCu indicates it is at ABL top. It is not deepening
17:19		
17:22		Fire ends its main run at AP7 Highway. Firefighters burnout operation reduced fire intensity







17:26		Spot fires open left flank. New runs uphill
17:33		New PyroCu, this time deepening stage is developing
17:45		
17:58		
18:43		Biggest deepening. It is the deepest PyroCu seen
20:10		Fire has lost deepening stage and is losing penetration stage

**LLANÇÀ FIRE:** Catalonia 16/07/2022







13:35		ignition
14:10		Convective plume meanwhile is in the canyon
14:16		Wind effect when plume arrives on top of the ridge
14:21		Separated plumes by each flank
14:25		



14:29		First condensation on top of the plume
14:32		Overshooting PyroCu
15:01		Fire going down the slope. It has lost intensity
15:32		Surface plume






15:56		Small vertical plume with a minor fire run
16:37		Wind driven plume
18:20		Vertical plume with new intense fire runs
21:43		Back to poor activity at sunset
01:14		New wind driven plume
06:20		Back to flanking and surface wind driven plume

**TORROELLA FIRE**, Catalonia. Date: 22/07/2021







18:53		Convective plume developing. Early penetration stage into a very stable ABL
19:18		Fire reaches its highest penetration with strong wind shear. It stays at Cplume stage
19:39		Timid overshooting. Wind shear destroys it
20:25		
20:58		
21:11		The night starts to create lower plume development. Its penetration is losing strength.






22:38		Shallower Cplume before it goes back to surface plume
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**SANTA COLOMA DE QUERALT, Catalonia.**






Date: 24/07/2021			
15:51			Fire evolving in the surface layer
16:36			Plume starts the penetration stage
17:31			Plume hits the ABL top without deepening
17:51			The firefighter's job has calmed down the fire, back to the surface layer
18:12			Flank opening re starts the penetration stage. Good Cplume








18:18		The Cplume keeps pushing the penetration stage
18:21		Penetration stage gets to the ABL top and plume flattens at that level
19:03		
19:29		Plume creates a shallow overshooting without reaching LCL
20:07		
20:30		Deep overshooting goes over LCL with a shallow push

20:49		Plume top flattens due to stability. No more deepening
21:13		Plume maintains an overshooting over the head fire, but ABL starts to shrink
21:34		
21:59		
Date: 25/07/2021		
08:13		Fire under a stable layer with some plumes starting the penetration stage where the fire can run uphill






10:34		Penetration stage into a stable ABL
10:50		
11:44		Plume rising with ABL reaches LCL
12:58		Deepening stage
13:30		

17:17		Firefighters Jobs drives the plume back to the surface layer and penetrating pushes
18:45		Penetrating stage
18:51		Plume rises penetrating stage
19:11		Plume above LCL deepening
19:37		Deep PyroCu




19:45		PyroCu push flattens due to shear
20:12		Breaking stability and achieving free convection. Plume rises to 8000 m becoming a PyroCb
20:23		Plume keeps pushing to free convection
20:52		Plume starts to fade away above the stable layer
21:15		Plume completely dissipated




**POBLA MASSALUCA fire. 12/07/2021**

14:21		First plume
14:43		
14:51		Convective plume
15:09		Head fire blocked by river. Plume becomes wind driven
15:28		New flank fire run





16:14		
17:25		




**SIERRA BERMEJA fire. 09-13/09/2021**

10/09/2021		
17:48		Shallow PyroCu with Sea breeze (@infoca)

20:00		Twin PyroCu (@infoca)
12/09/2021		
22:23		Wind driven Surface plume
23:04		overshooting



23:06		Deep overshooting
<b>13/09/2021</b>		
03:31		
03:57		Momentaneous convective plume
4:53		Back to surface wind driven

7:38		
10:16		Wind driven surface plume
11:01		
11:28	