

# EM facilities & specifications for ET multi-messenger science

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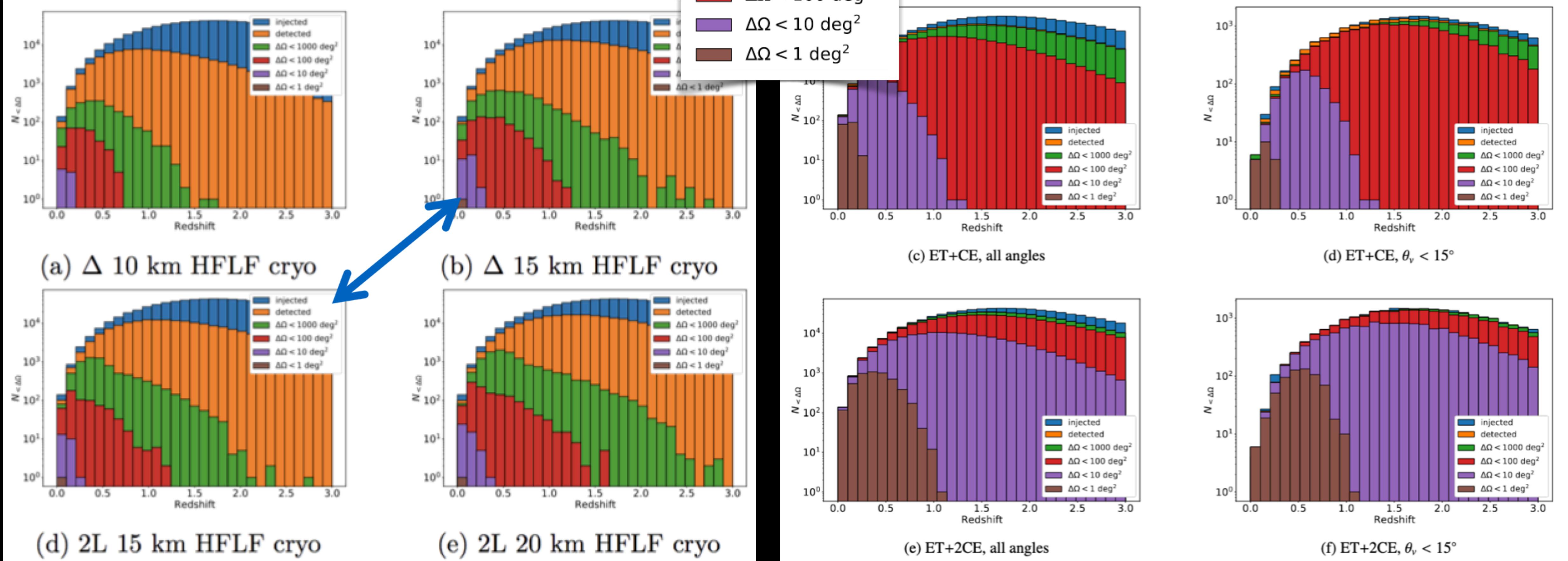
# EM facilities for ET multi-messenger science

- MWL instrument tables
- WST

# EM facilities for ET multi-messenger science

Configuration study

Ronchini+22



# EM facilities for ET multi-messenger science

- Cover the entire EM spectrum
- Different goals (search, identification,...)
- Different phenomena (GRB, KN, off-axis afterglow,...)
- Different strategies (low-redshift, high-redshift, error region,...)

# EM facilities for ET multi-messenger science

~ On-axis GRB

Off-axis afterglow

KN

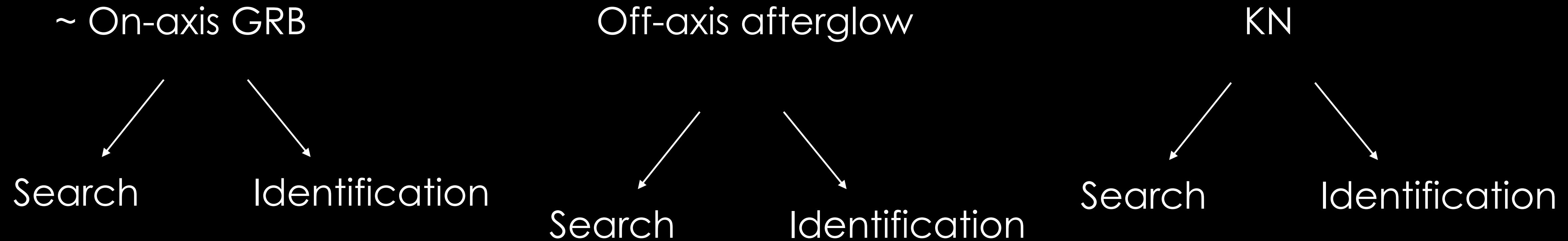
## List of instruments

	VHE	Gamma	X	UV	Optical	NIR	Mm	Radio
Search								
Identification								



# EM facilities for ET multi-messenger science

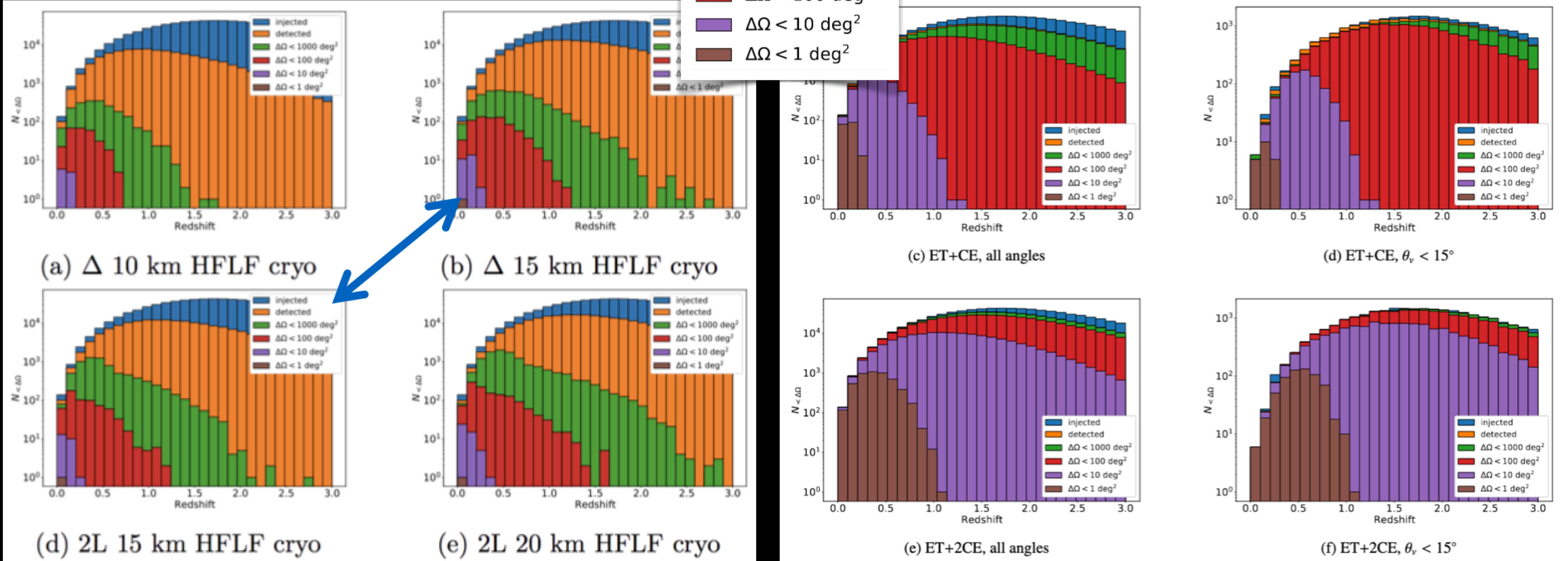
## Specifications needed



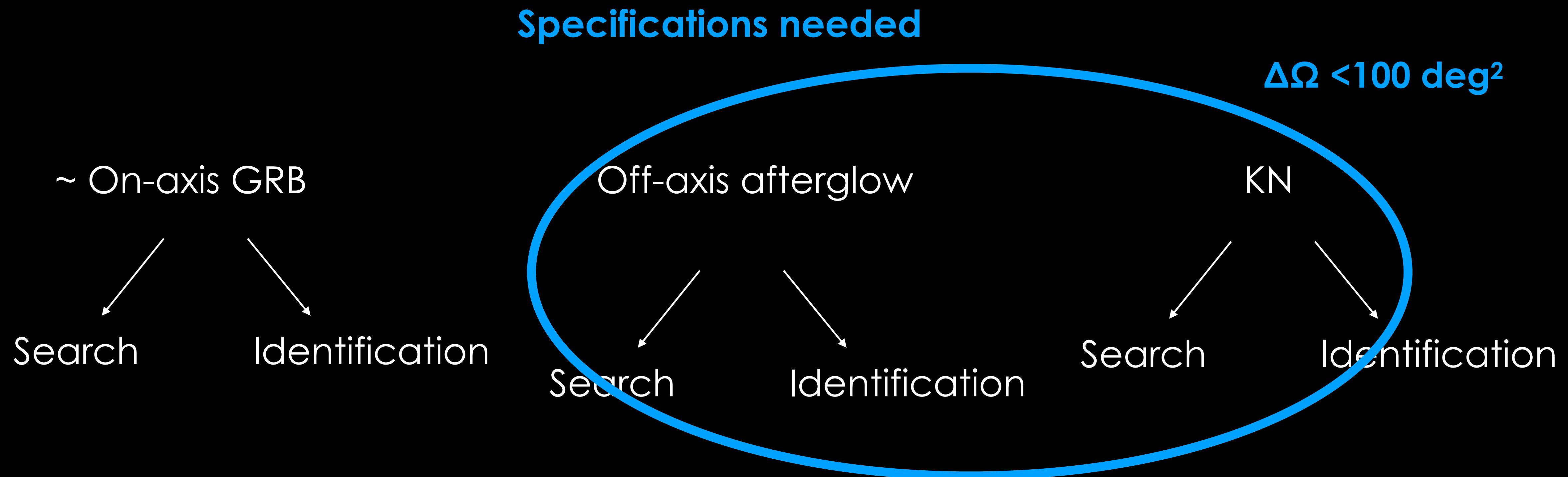
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# EM facilities for ET multi-messenger science



# EM facilities for ET multi-messenger science

## Required Instruments specifications

KN search	FoV	Sensitivity	ToO delays	Resolution	Range	Survey strategy	Time/yr
UV							
Optical							
NIR							
Radio							



Telescope Aperture	12 m, seeing limited
Telescope FoV	2.5 - 5 deg <sup>2</sup>
MOS LR Multiplex	20,000
MOS LR Resolution	2,000-7,000
MOS LR Spec Range	370 (350) - 970 nm
MOS HR Multiplex	2,000
MOS HR Resolution	20,000-40,000
MOS HR Spec Range	3-4 regions in 350-970 nm
IFS FoV	3x3 arcmin <sup>2</sup>
IFS Resolution	3,000-5,000
IFS Spec Range	370-970 nm
IFS Mosaic	9x9 arcmin <sup>2</sup>
MOS & IFS simultaneous operation	



ET simulations

*Sofia Bisero (PhD student)*

+

WST simulator



WST-ET Science case

KN + GRB properties

*GSSI group & Milano Bicocca PROMETEO group*



A wide-angle photograph of a landscape at night. In the foreground, several large, glowing, spherical objects of various sizes are scattered across a dark green field. These spheres emit a warm, yellowish glow. In the background, a city skyline is visible under a dark sky, with numerous small lights from buildings and streets. A massive, detailed sphere, resembling a celestial body like Jupiter or a large moon, hangs prominently in the upper center of the frame, casting a soft light over the scene.

Thank you!