THE POPULATION OF CLASSICAL LGRBs:
CHARACTERIZATION OF THE POPULATION

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PRESENTATION OF THE TOPIC

- Characterize the population of LGRBs

A

- Redshift distribution
- Luminosity function

B

- Light-curve and spectral properties
- Emitting mechanism of the different phases

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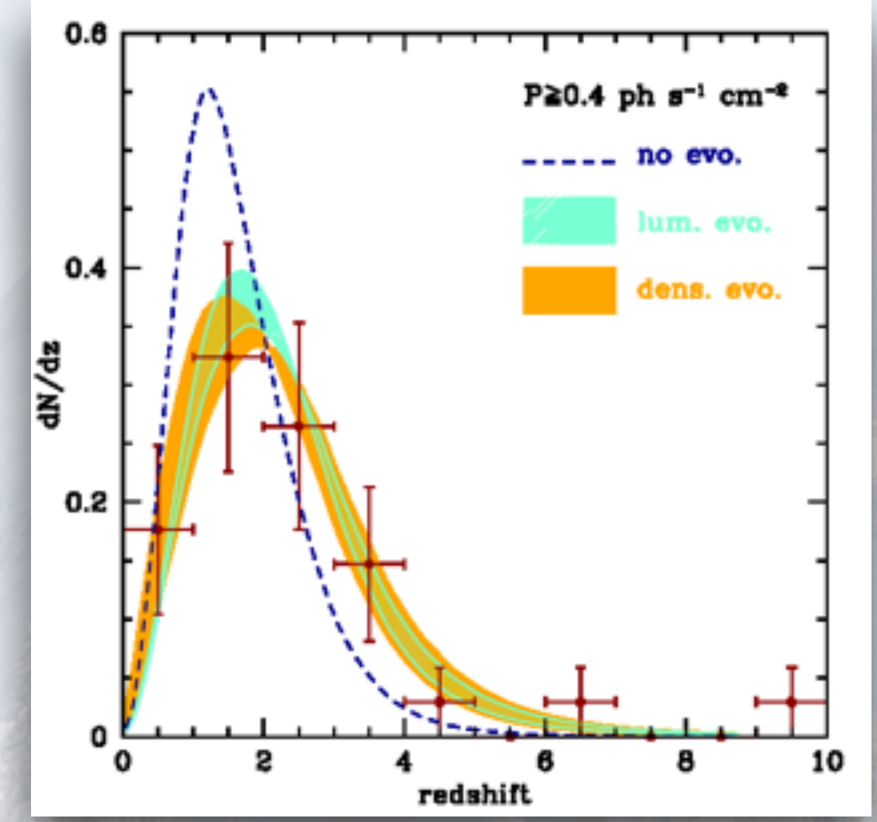
A and B strictly related.

B treated mainly in previous talk

SCIENTIFIC ISSUES

Salvaterra+12



- Redshift distribution
- Luminosity function

- Is there a luminosity evolution?
- Is there a density evolution?
- Progenitors
- Rate
- Star-formation tracers
- First stars and stellar evolution

SCIENTIFIC ISSUES

Needs

- homogeneous sample of LGRBs with multi-lambda observations: jet opening angle, medium density
- unbiased samples of LGRBs
- rapid localization and spectroscopic follow-up observations: redshift completeness

SVOM CONTRIBUTION

Needs

- **homogeneous sample of LGRBs with multi-lambda observations: jet opening angle, medium density**
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SVOM CONTRIBUTION

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- homogeneous sample of LGRBs with multi-lambda observations: jet opening angle
- **unbiased samples of LGRBs**
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NIR follow-up

SVOM CONTRIBUTION

Needs

- homogeneous sample of LGRBs with multi-lambda observations: jet opening angle
- unbiased samples of LGRBs
- **rapid localization and spectroscopic follow-up observations: redshift completeness**

To date 30% of LGRBs have redshift:
SVOM goal is to double the %

SVOM CONTRIBUTION

Needs

- homogeneous sample of LGRBs with multi-lambda observations: jet opening angle
- unbiased samples of LGRBs
- **rapid localization and spectroscopic follow-up observations: redshift completeness**

pointing strategy + VT + GFT + larger telescopes

SVOM CONTRIBUTION

Synergy with CTA and SKA

- CTA: further information on the physics
- SKA: environment, jet opening angle
- SKA: orphan afterglows, very high redshift afterglows

SVOM CONTRIBUTION

Synergy with (external) telescope

- future transient follow-up machines (NTE, SOXS,…)
- 8-m telscopes
- JWST