UNIVERSITY OF AMSTERDAM

UvA-DARE (Digital Academic Repository)

Different manifestations of accretion onto compact objects

Altamirano, D.

Glossary

- **AMXPs**: Accreting millisecond X-ray pulsars (see, e.g., Chapters 3 & 4).

- **ASM**: All Sky Monitor (Levine et al. 1996). See also Section 1.2.1, page 2, for more details.

- **BH/BHC**: Black hole / Black hole candidate.

- **BLN**: Band Limited Noise.

- **BS**: Banana state, usually subdivided into LLB, LB and UB (used in the context of neutron star Atoll sources – See Figure 1.8 on page 13).

- **CD**: Color-diagram.

- **EIS**: Extreme island state (used in the context of neutron star Atoll sources – See Figure 1.8 on page 13).

- **FWHM**: Full width at half maximum.

- **GC**: Globular Cluster.

- **HEXTE**: High Energy X-ray Timing Experiment (Gruber et al. 1996; Rothschild et al. 1998). See also Section 1.2.1, page 2, for more details.

- **HBO**: Horizontal Branch Oscillation (used in the context of neutron star Z-sources).

- **HID**: Hardness-Intensity Diagram.

- **HIMS**: Hard Intermediate State (used in the context of BHC source states – See Section 1.4, page 12, and Section 8.2, page 141, for more details).

- **HMXB**: High-mass X-ray Binary.

- **HS**: High state (or 'high/soft state', used in the context of BHC source states – See Section 1.4, page 12, and Section 8.2, page 141, for more details).

- **IS**: Island state (used in the context of neutron star Atoll sources – See Figure 1.8 on page 13).

- **LB**: Lower banana (used in the context of neutron star Atoll sources' states – See Figure 1.8 on page 13).

- **LFN**: Low-frequency noise.

- **LLB**: Lower-left banana (used in the context of neutron star Atoll sources' states – See Figure 1.8 on page 13).

- **LMXB**: Low-mass X-ray Binary.

- **LS**: Low state (or 'low/hard state', used in the context of BHC source states – See Section 1.4, page 12, and Section 8.2, page 141, for more details).

- **L_x**: X-ray Luminosity.

- **L_{Edd}**: Eddington Luminosity.

- **L_i**: Power spectral features are usually fitted with a function consisting of one or multiple Lorentzians, each denoted as L_i, where i determines the type of component. The characteristic frequency (ν_{max}) of L_i is denoted ν_i. In this thesis I use:

  - L_u for upper kHz QPO.
  - L_ℓ for lower kHz QPO.
  - $L_{\ell ow}$ for a feature that might be the same as L_ℓ, when $\nu_\ell \lesssim 50$ Hz (see also Section 7.3.6, page 124, for more details).
  - L_h for hump.
  - L_b for break.
  - L_{b2} for the second break.
  - L_{LF} for Low Frequency QPO.
  - $L_{LF/2}$ for the subharmonic of the Low Frequency QPO (in the context of NS, see Section 6.4.2, page 94, for more details).
  - L_{LF}^+ **or** L_{LF}^- for the QPOs at higher and lower frequency than L_{LF} (in the context of BHC).

- L_{VLFN} for the Very-low frequency noise.

- $\dot{m}$: Local accretion rate (see Chapter 2).

- $\dot{m}_{Edd}$: Local Eddington accretion rate (see Chapter 2).

- **NS**: Neutron star.

- ν_0: centroid frequency of the Lorentzian (see also ν_{max}).

- ν_s: spin frequency of the neutron star.

- ν_{max}: Characteristic frequency of a Lorentzian L_i, defined as $\nu_{max} = \sqrt{\nu_0^2 + (FWHM/2)^2} = \nu_0\sqrt{1 + 1/4Q^2}$. See also L_i and Belloni et al. (2002b).

- **PCA**: Proportional Counter Array (Jahoda et al. 2006). See also Section 1.2.1, page 2, for more details.

- **PCU**: Proportional Counter Unit (Jahoda et al. 2006). See also Section 1.2.1, page 2, for more details.

- **PDM**: Phase dispersion minimization technique (Stellingwerf 1978). See also Section 1.2.1, page 7, for more details.

- **Q**: Quality factor of a Lorentzian. It is defined as $Q = \nu_0/FWHM$.

- **QPO**: Quasi-periodic oscillation.

- **RXTE**: Rossi X-ray Timing Explorer (Jahoda et al. 2006). See also Section 1.2.1, page 2, for more details.

- **SIMS**: Soft Intermediate State (used in the context of BHC source states – See Section 1.4, page 12, and Section 8.2, page 141, for more details).

- $t_{thermal}$: Thermal timescale is defined as $t_{thermal} = c_p T/\epsilon$ where c_p, T and ϵ are the heat capacity at constant pressure , the temperature and the nuclear energy generation rate, respectively

- t_{accr}: Accretion timescale is defined as $t_{accr} = y/\dot{m}$ where y and $\dot{m}$ are the column density of the burning layer and local accretion rate, respectively.

- **UB**: Upper banana (used in the context of neutron star Atoll sources' states – See Figure 1.8 on page 13).

225

- **VLFN**: Very-low frequency noise.

- y_f: column depth of the fuel layer (in the context of burning of material on the neutron star surface).