

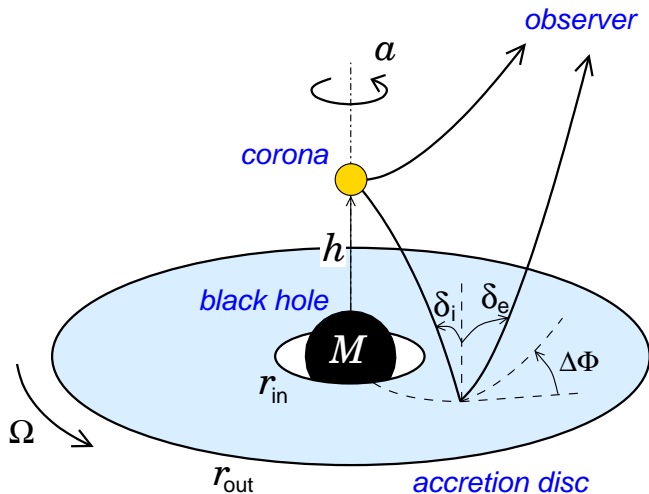
Polarization in the lamp-post geometry of the compact corona illuminating a black-hole accretion disc

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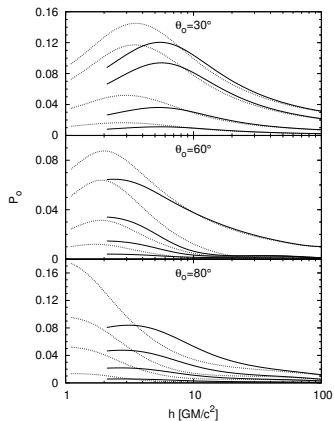
Astronomical Institute
Academy of Sciences of the Czech Republic, Prague

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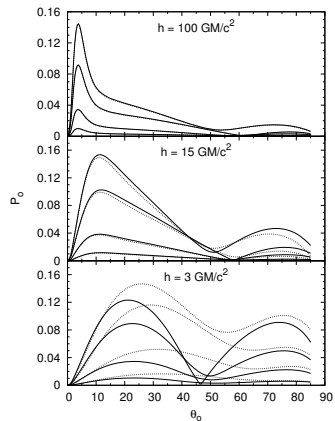
Scheme of the geometry



Polarization degree



Energy bands: 20 – 50 keV
10 – 20 keV
6 – 10 keV
2 – 6 keV

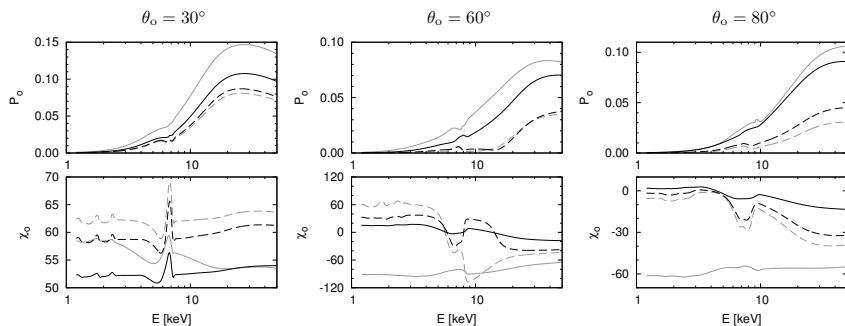


dotted → extreme Kerr black hole ($a=1$)
solid → Schwarzschild black hole ($a=0$)

Dependence on height

- importance of the local polarization properties
- geometry of scattering (incident, emission and relative azimuthal angles)
- source height, observer inclination and black hole spin
- formation of additional depolarizing critical points
- illumination pattern depends on height of the source

Polarization of the total radiation



black \rightarrow Schwarzschild black hole ($a=0$)

grey \rightarrow extreme Kerr black hole ($a=1$)

solid \rightarrow $h = 3 \text{ GM}/c^2$

dashed \rightarrow $h = 15 \text{ GM}/c^2$