Relativistic Bondi accretion for stiff equations of state[1] CHLOE
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— We revisit Bondi accretion - steady-state, adiabatic, spherical
gas flow onto a Schwarzschild black hole at rest in an asymptotically homogeneous
medium - for stiff polytropic equations of state (EOSs) with adiabatic indices $\Gamma >
5/3$. A general relativistic treatment is required to determine their accretion rates,
for which we provide exact expressions. We discuss several qualitative differences
between results for soft and stiff EOSs - including the appearance of a minimum
steady-state accretion rate for EOSs with $\Gamma \geq 5/3$ - and explore limiting cases in
order to examine these differences. Our results are useful, for example, to estimate
the accretion rate onto a mini-black hole residing at the center of a neutron star.

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