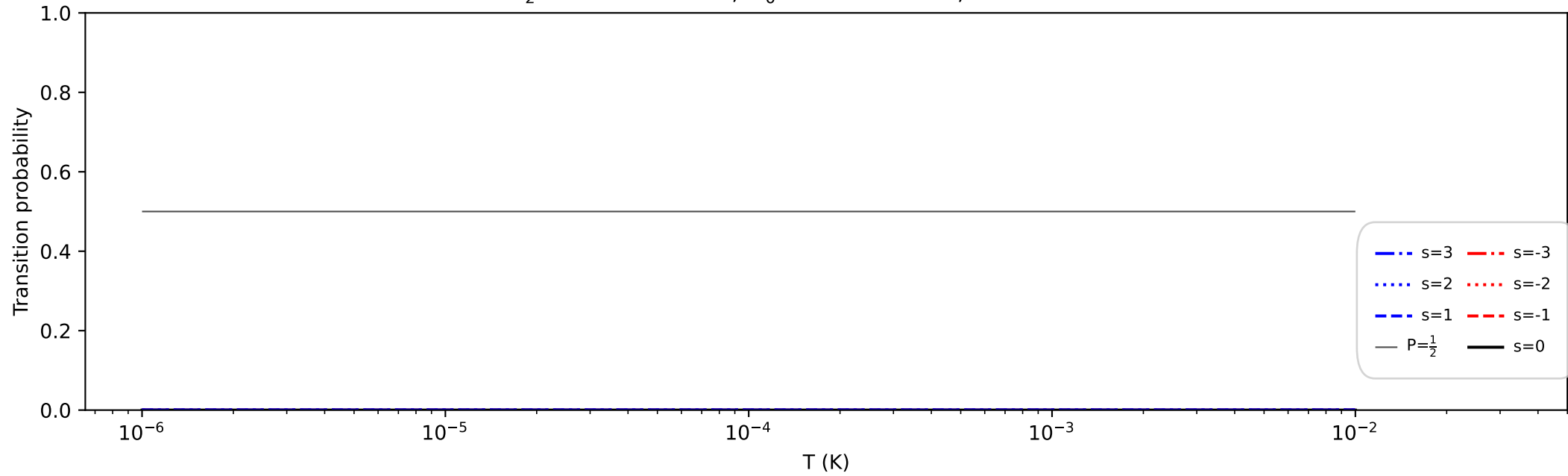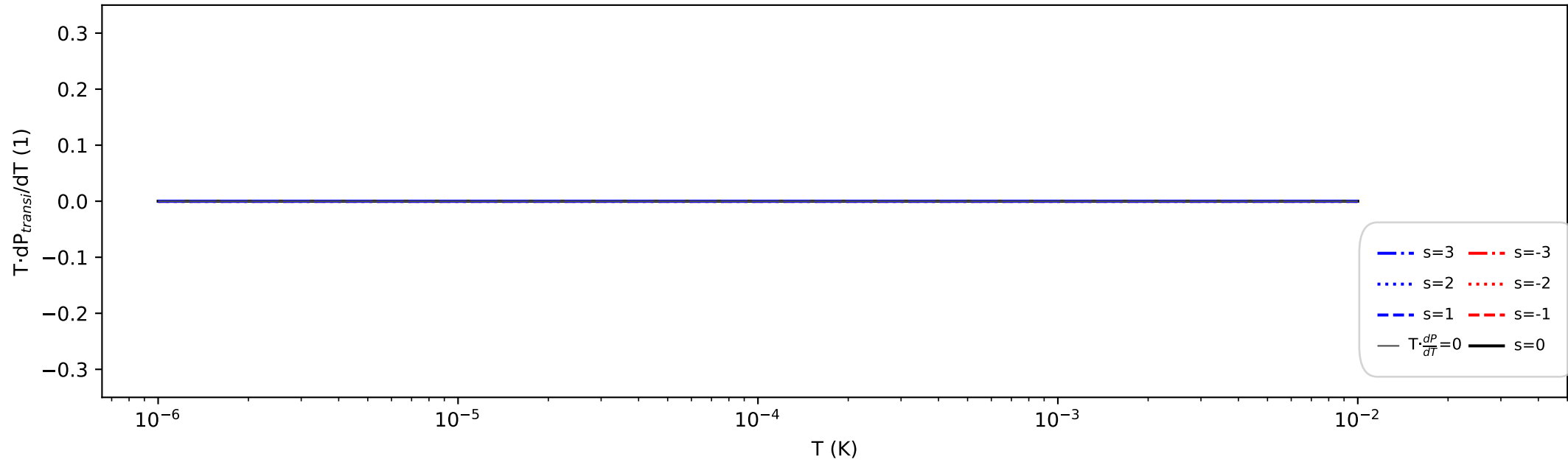$\frac{0}{1}\pi$-pulse, n=0, $P_{\geq n_{max}}$=0.01, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

$\frac{0}{1}\pi$-pulse, n=0, P_{thres}=0.001, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm
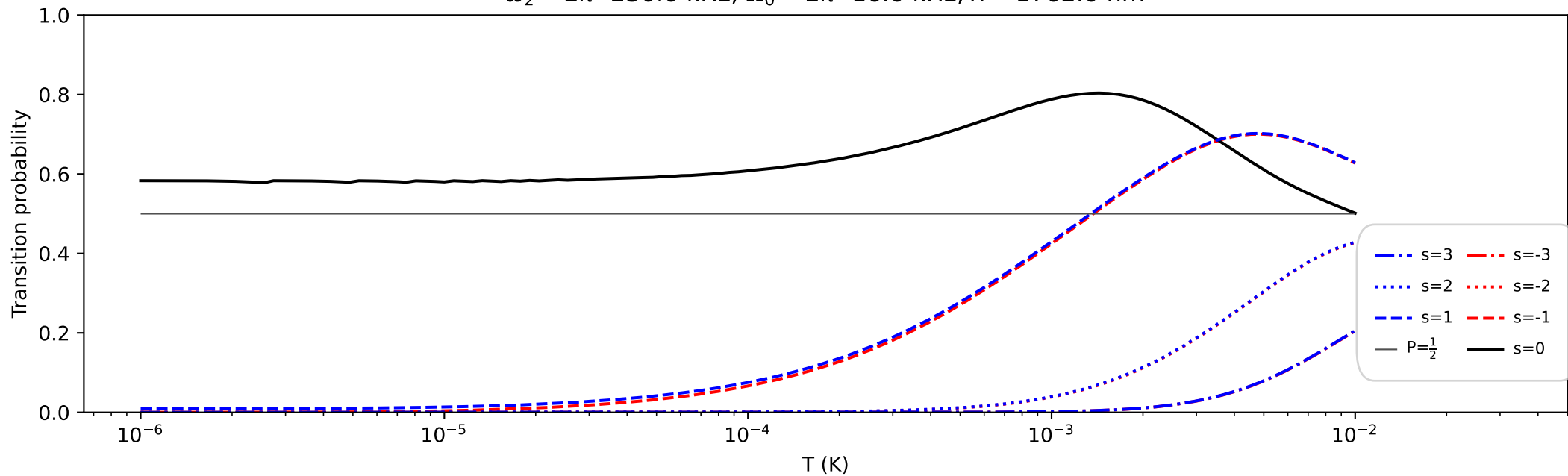
Figure. Top panel: $\frac{1}{16}\pi$-pulse, n=0, $P_{\geq n_{max}}=0.01$, ^{138}Ba$^+$, $\omega_z = 2\pi \cdot 250.0$ 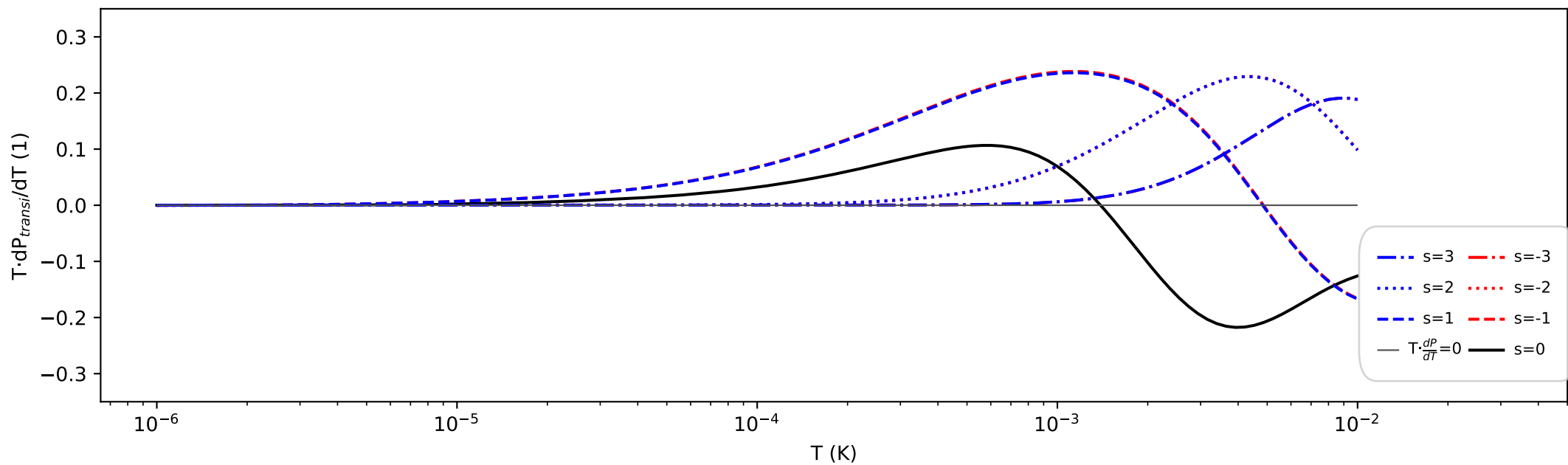kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm. Bottom panel: $\frac{1}{16}\pi$-pulse, n=0, $P_{thres}=0.001$, ^{138}Ba$^+$, $\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm.
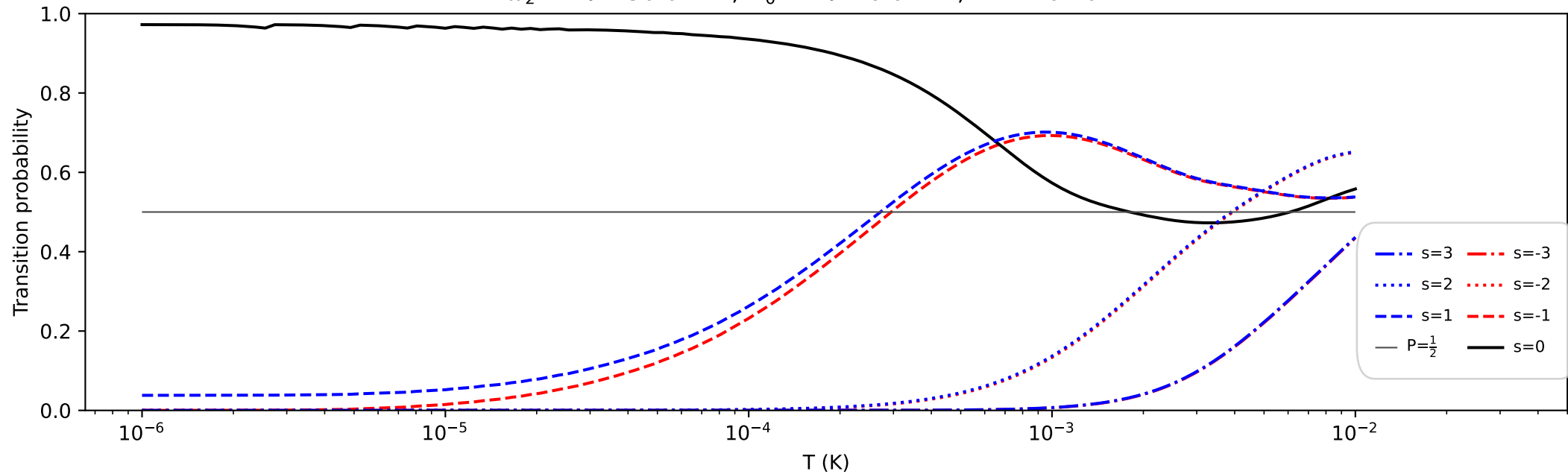
Top panel title: $\frac{1}{8}\pi$-pulse, n=0, $P_{\geq n_{max}}=0.01$, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

Bottom panel title: $\frac{1}{8}\pi$-pulse, n=0, $P_{thres}=0.001$, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

Top panel title: $\frac{1}{4}\pi$-pulse, $n=0$, $P_{\geq n_{max}}=0.01$, $^{138}\text{Ba}^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm
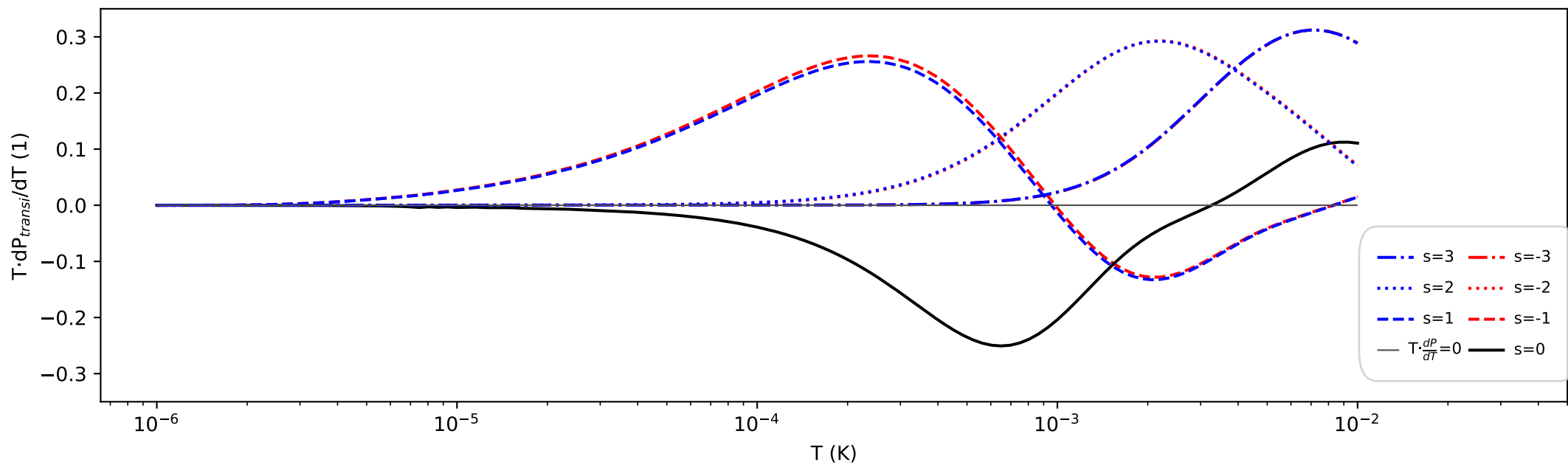
Top panel y-axis: Transition probability
Top panel x-axis: T (K)

Top panel legend: s=3, s=-3, s=2, s=-2, s=1, s=-1, $P=\frac{1}{2}$, s=0

Bottom panel title: $\frac{1}{4}\pi$-pulse, $n=0$, $P_{thres}=0.001$, $^{138}\text{Ba}^+$
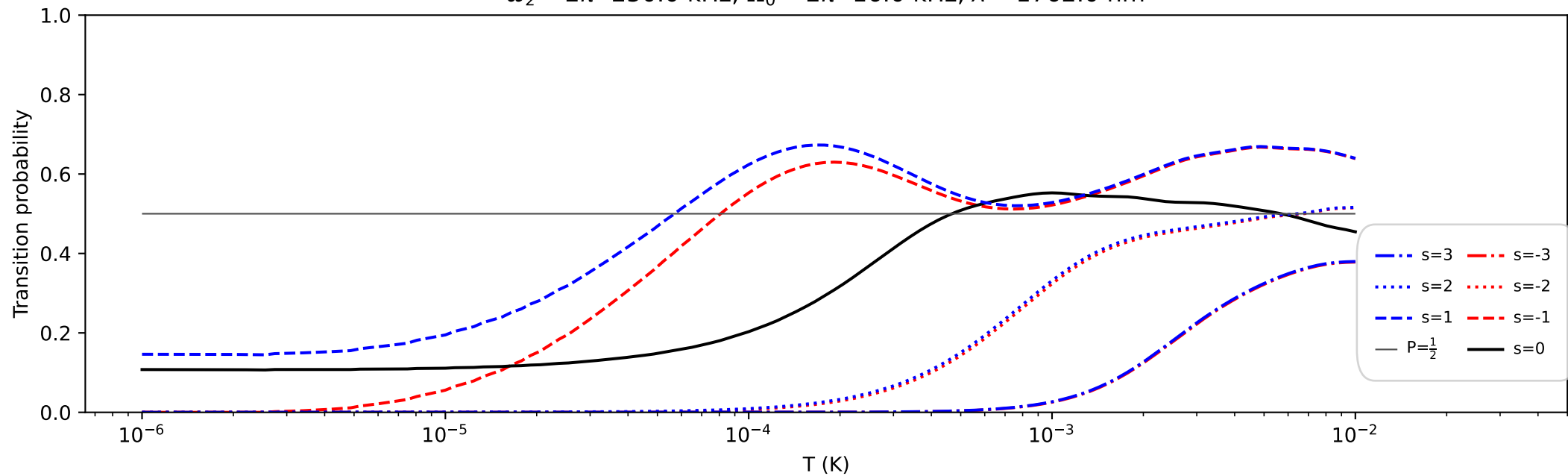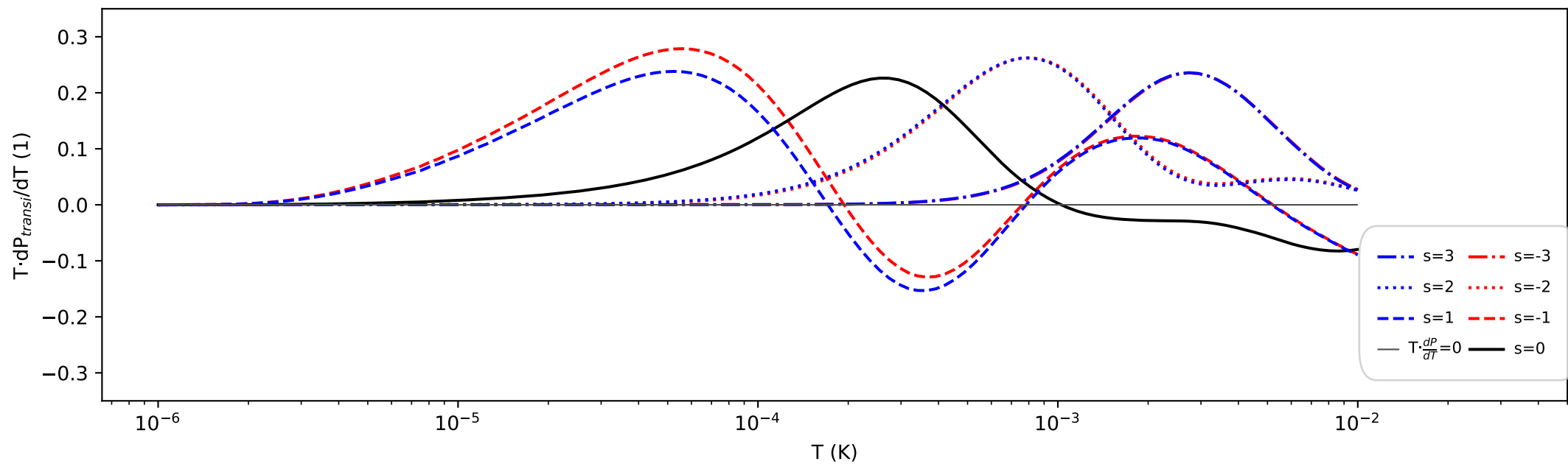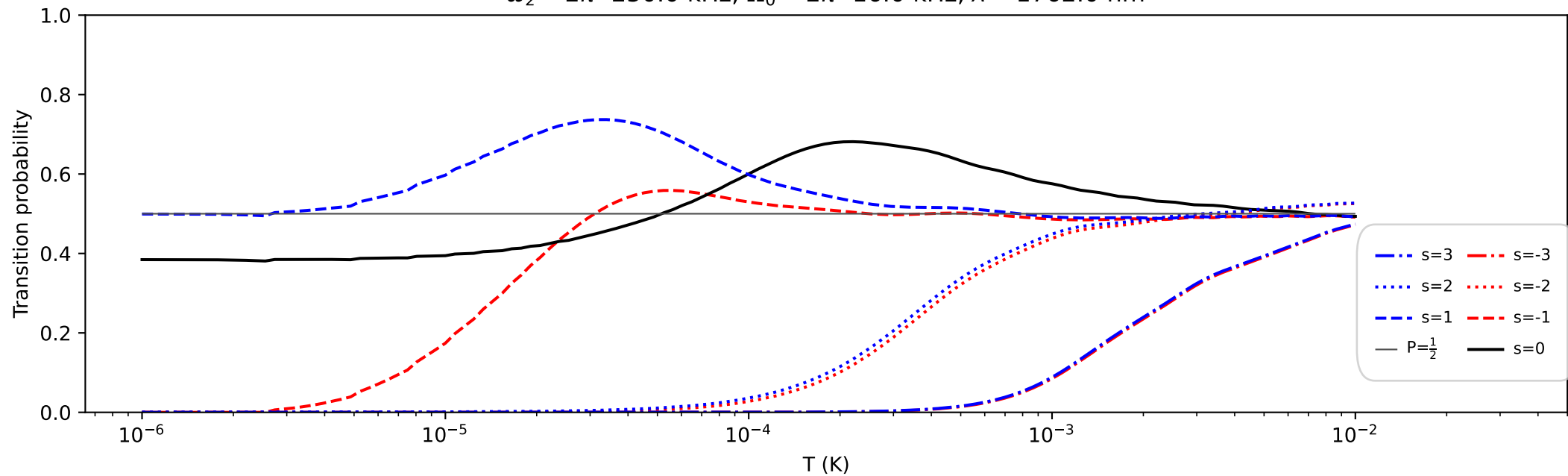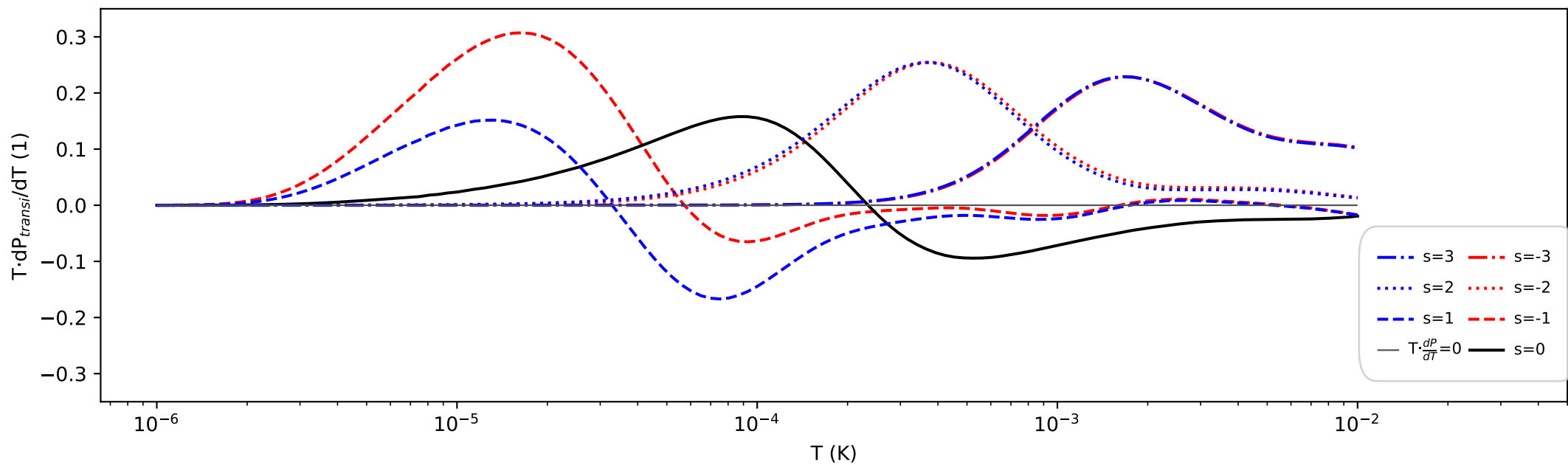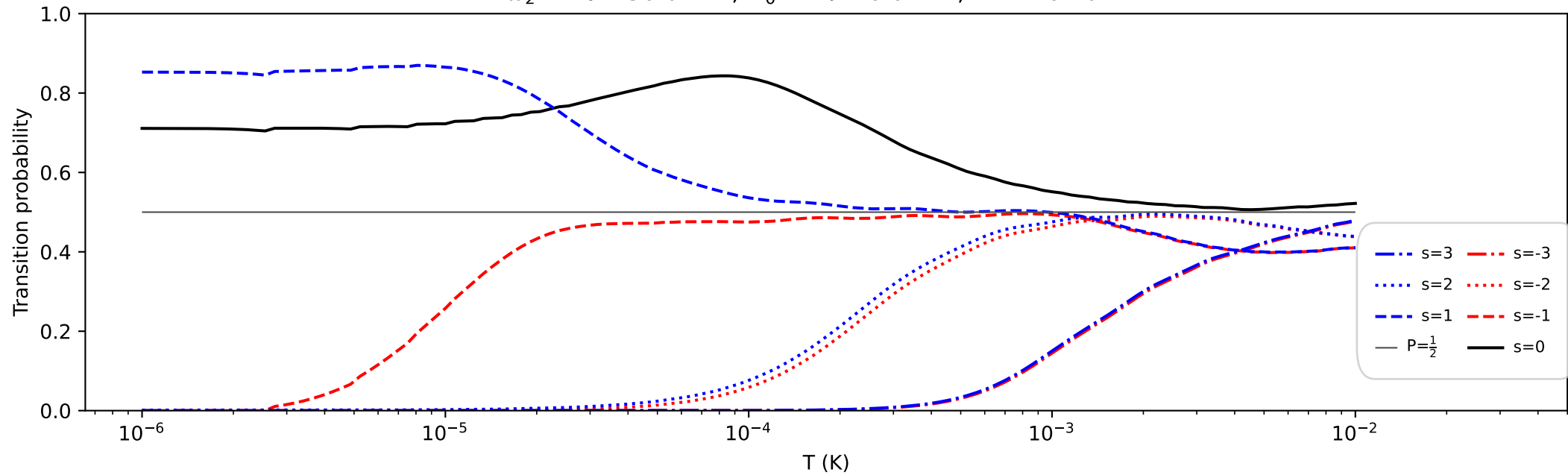$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

Bottom panel y-axis: $T \cdot dP_{transi}/dT$ (1)
Bottom panel x-axis: T (K)

Bottom panel legend: s=3, s=-3, s=2, s=-2, s=1, s=-1, $T \cdot \frac{dP}{dT}=0$, s=0

$\frac{1}{2}\pi$-pulse, n=0, $P_{\geq n_{max}}=0.01$, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

$\frac{1}{2}\pi$-pulse, n=0, $P_{thres}=0.001$, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

$\frac{3}{4}\pi$-pulse, n=0, $P_{\geq n_{max}}$=0.01, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

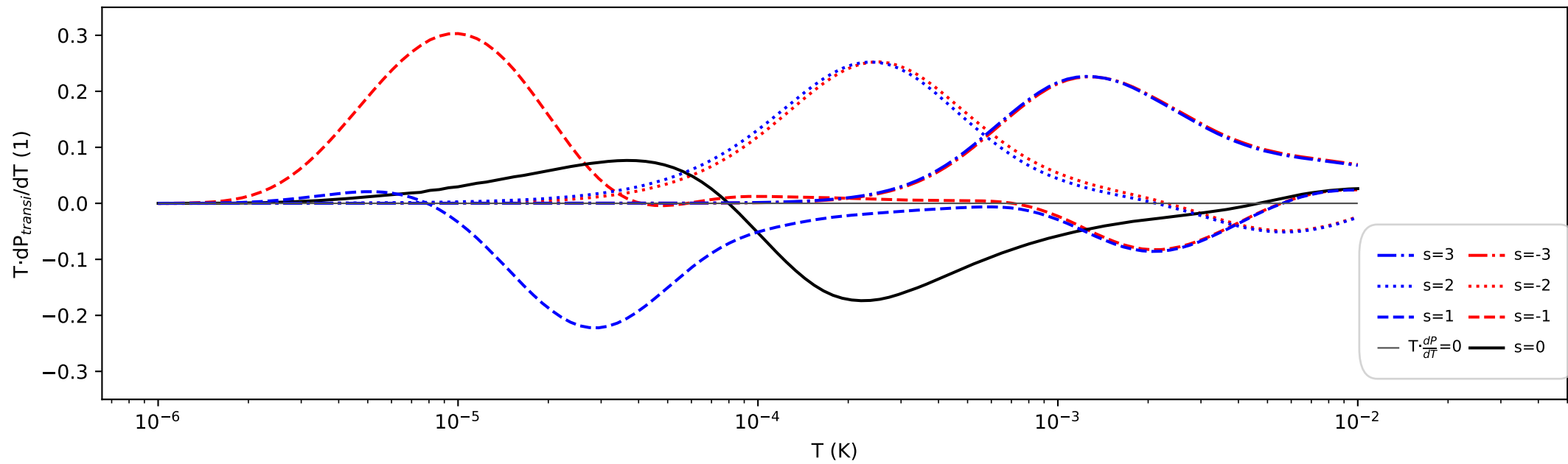$\frac{3}{4}\pi$-pulse, n=0, P_{thres}=0.001, ^{138}Ba$^+$
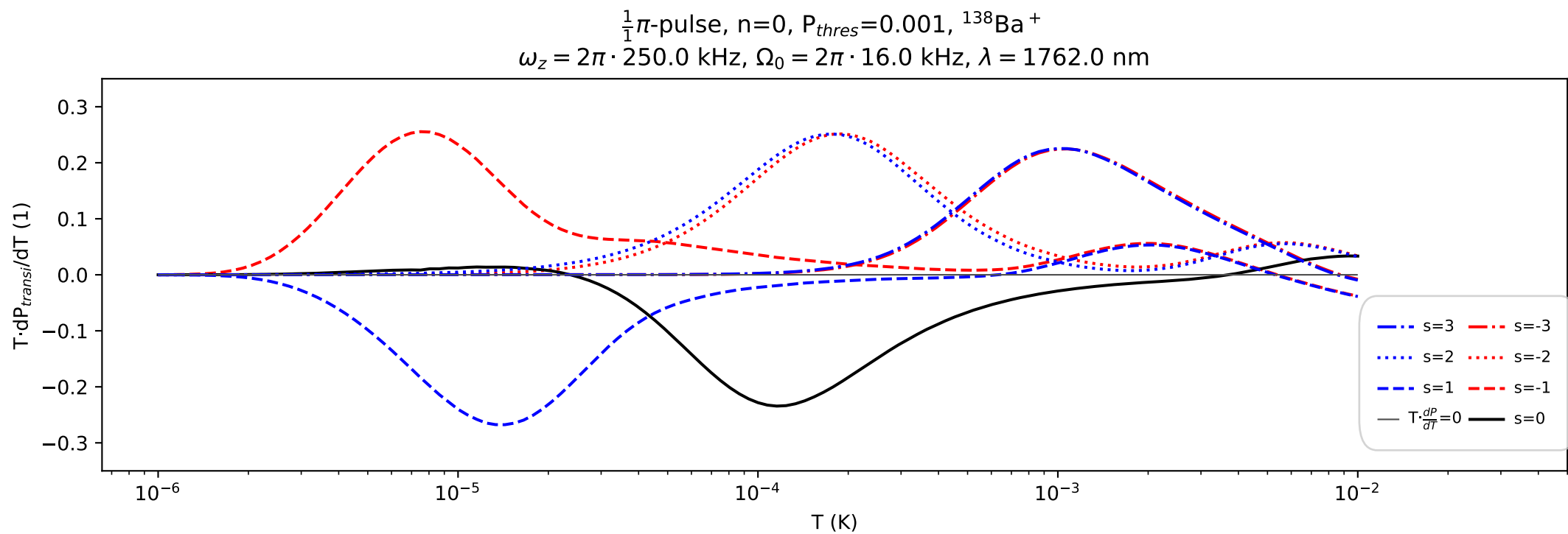$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

$\frac{1}{1}\pi$-pulse, n=0, $P_{\geq n_{max}}$=0.01, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

$\frac{1}{1}\pi$-pulse, n=0, P_{thres}=0.001, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm
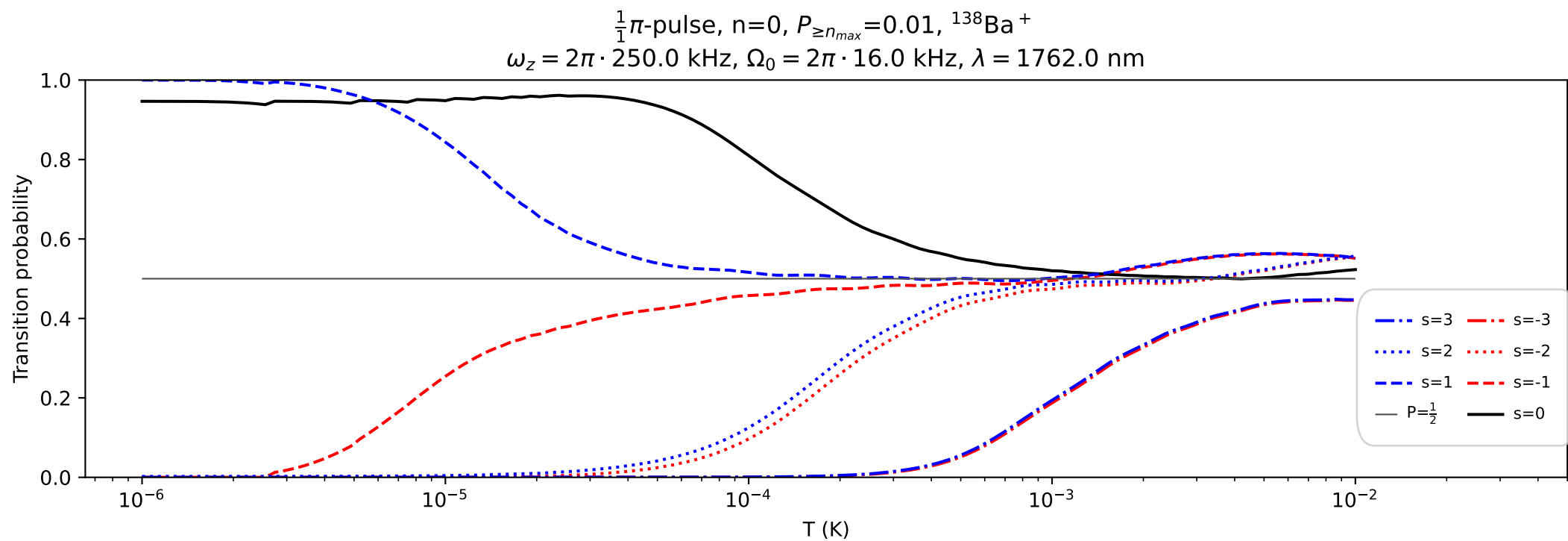
$\frac{5}{4}\pi$-pulse, n=0, $P_{\geq n_{max}}$=0.01, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

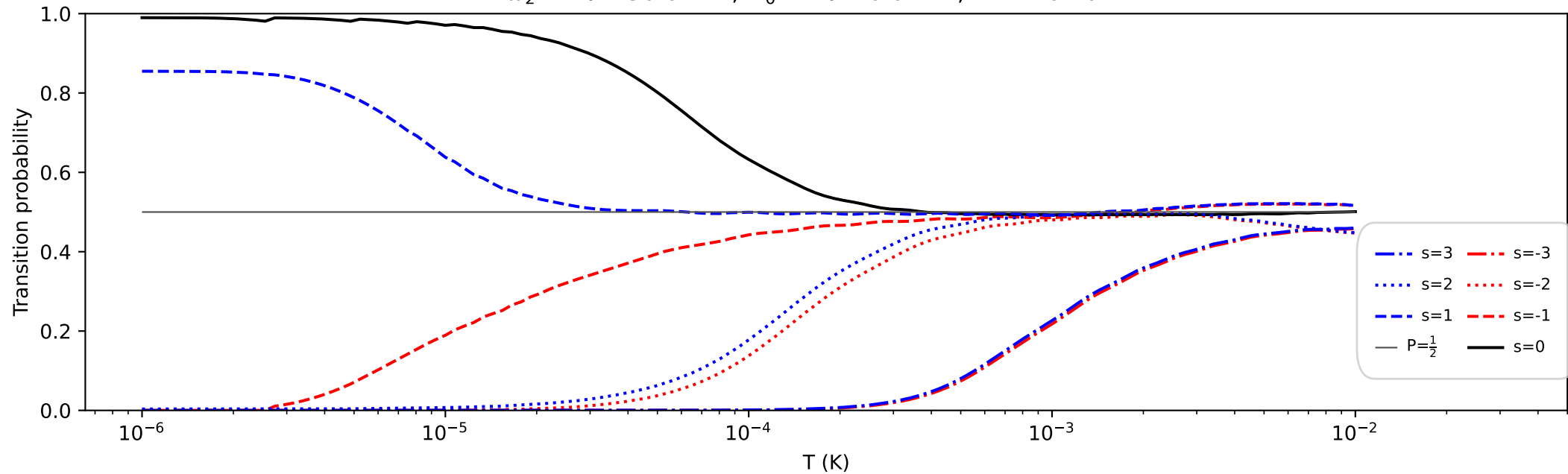$\frac{5}{4}\pi$-pulse, n=0, P_{thres}=0.001, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

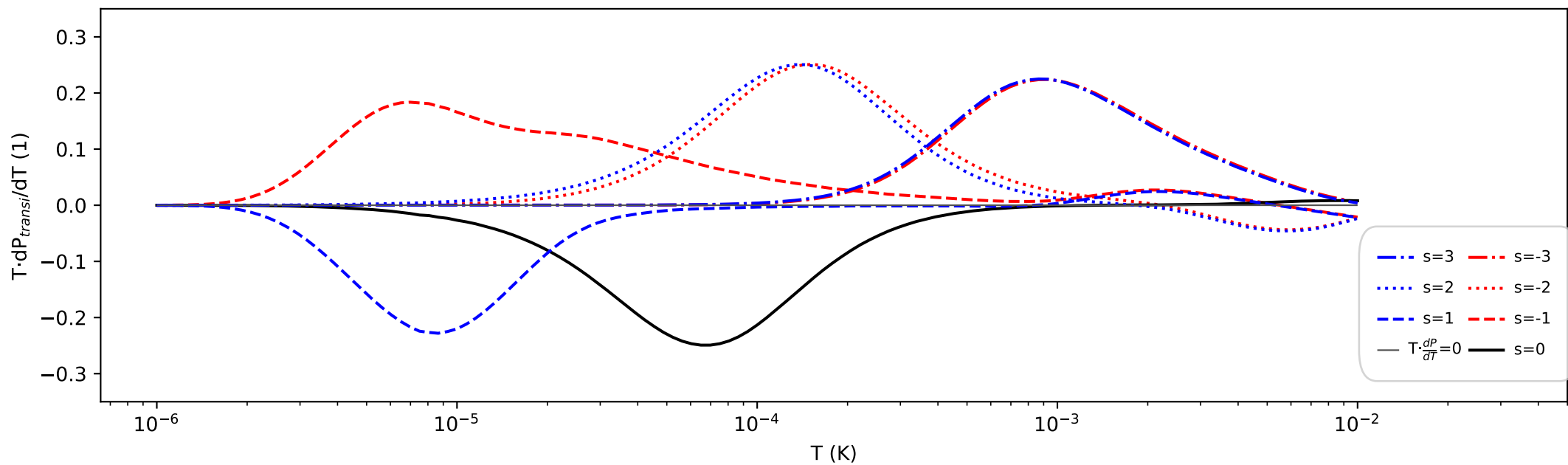$\frac{3}{2}\pi$-pulse, n=0, $P_{\geq n_{max}}$=0.01, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

$\frac{3}{2}\pi$-pulse, n=0, P_{thres}=0.001, ^{138}Ba$^+$
$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

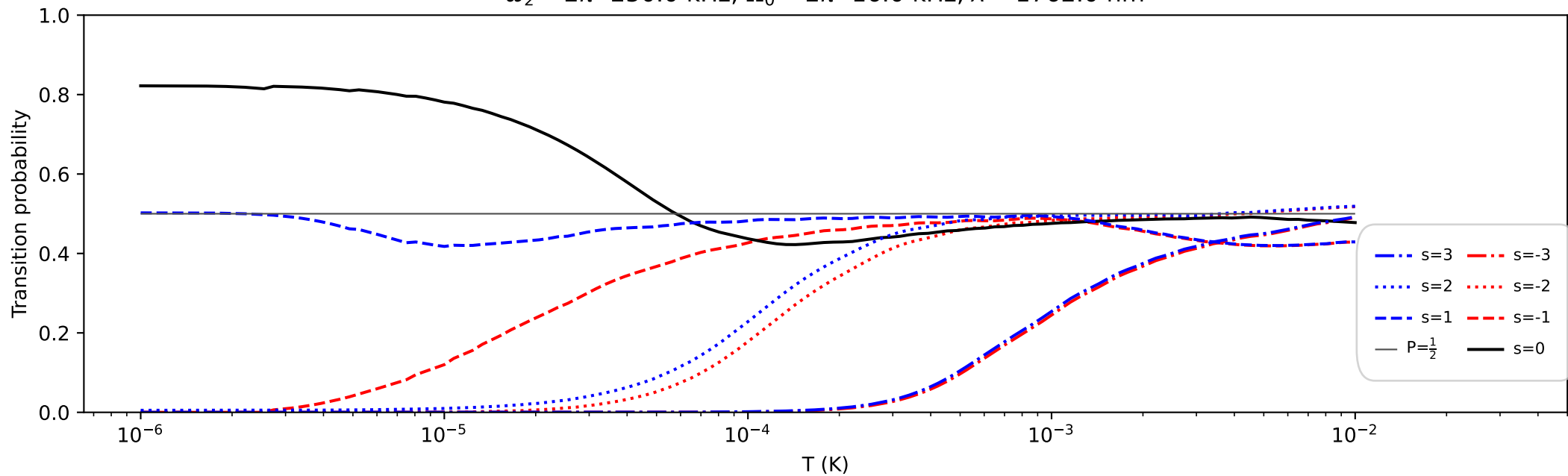Top panel: $\frac{7}{4}\pi$-pulse, n=0, $P_{\geq n_{max}}=0.01$, $^{138}Ba^+$
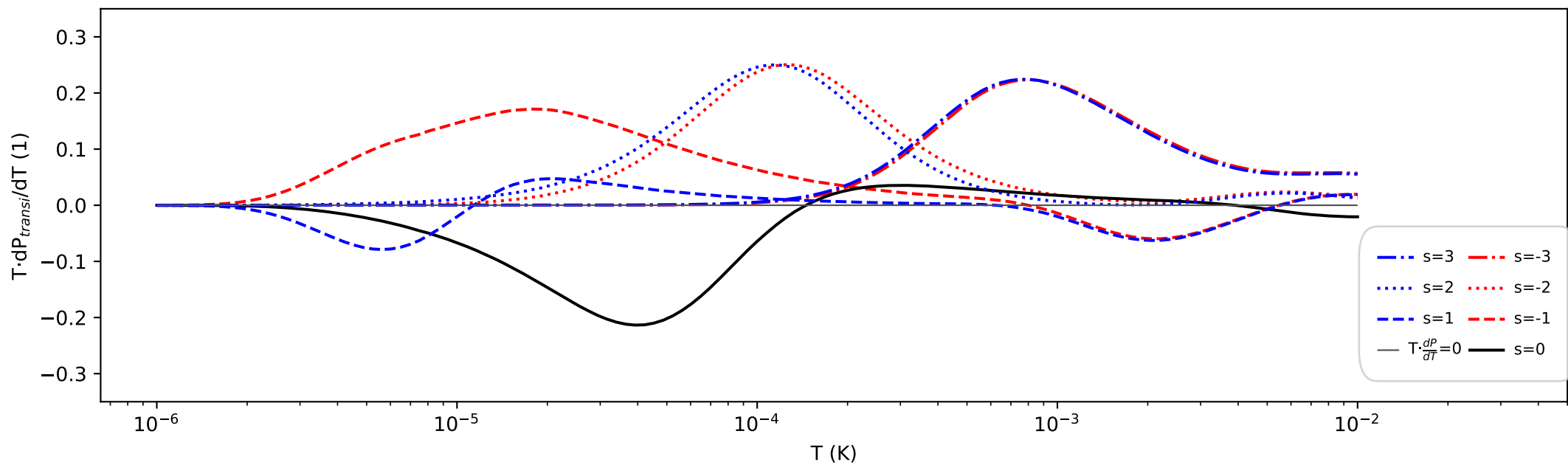$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

x-axis: T (K)
y-axis: Transition probability

Legend: s=3, s=-3, s=2, s=-2, s=1, s=-1, $P=\frac{1}{2}$, s=0

Bottom panel: $\frac{7}{4}\pi$-pulse, n=0, $P_{thres}=0.001$, $^{138}Ba^+$
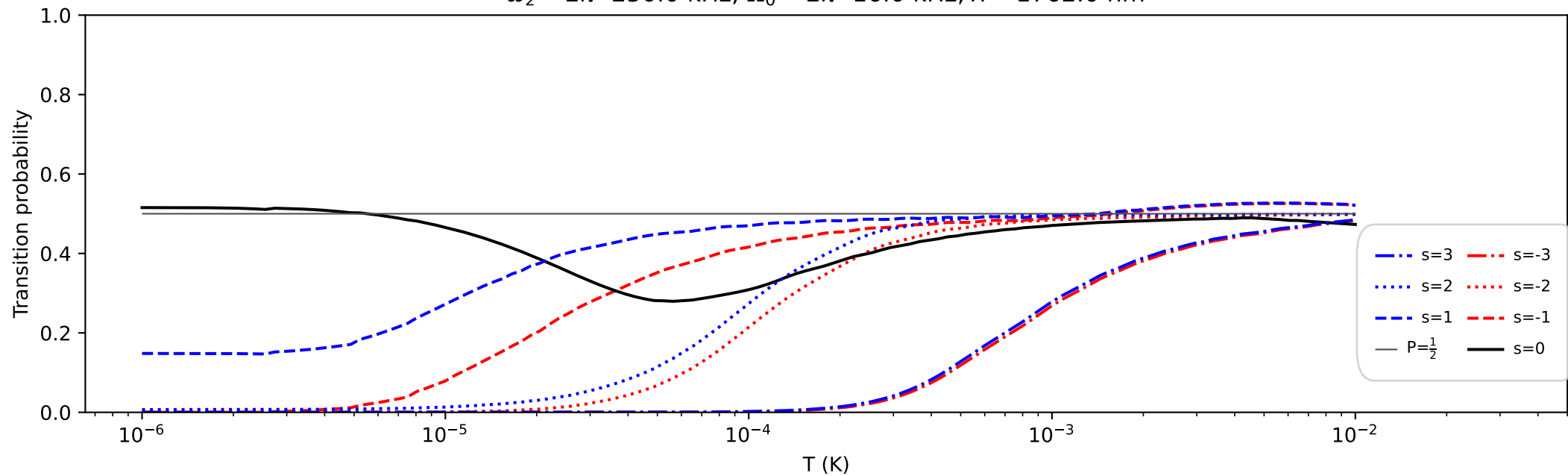$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

x-axis: T (K)
y-axis: $T \cdot dP_{transi}/dT$ (1)

Legend: s=3, s=-3, s=2, s=-2, s=1, s=-1, $T \cdot \frac{dP}{dT}=0$, s=0

$\frac{2}{1}\pi$-pulse, n=0, $P_{\geq n_{max}}$=0.01, ^{138}Ba$^+$

$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

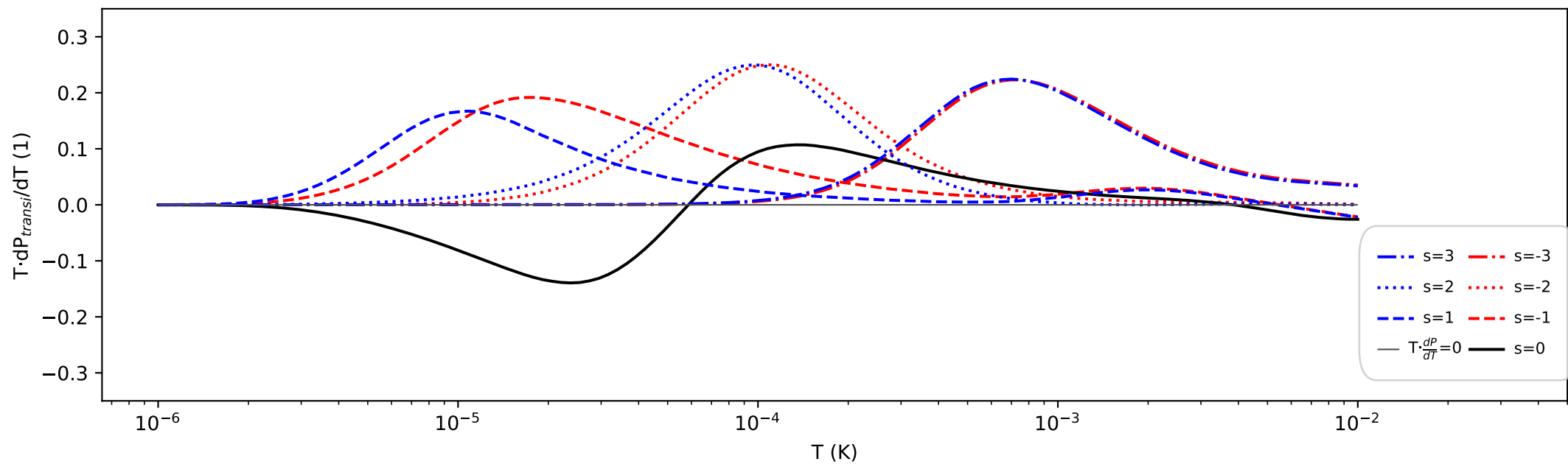Transition probability — T (K)

Legend: s=3, s=-3, s=2, s=-2, s=1, s=-1, P=$\frac{1}{2}$, s=0

$\frac{2}{1}\pi$-pulse, n=0, P$_{thres}$=0.001, ^{138}Ba$^+$

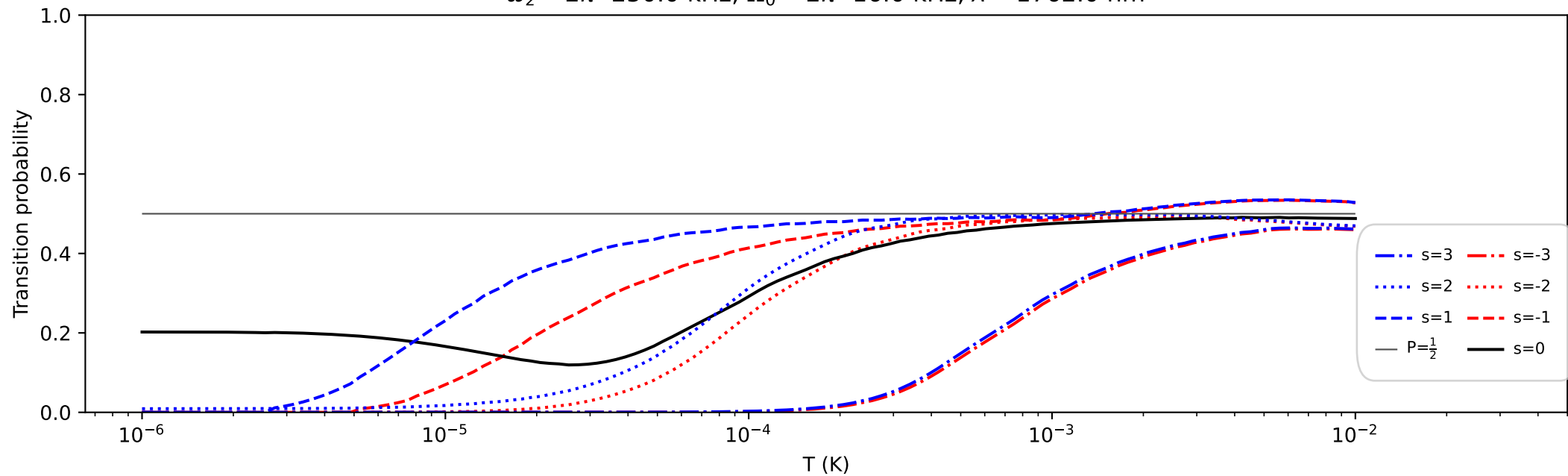$\omega_z = 2\pi \cdot 250.0$ kHz, $\Omega_0 = 2\pi \cdot 16.0$ kHz, $\lambda = 1762.0$ nm

T$\cdot$dP$_{transi}$/dT (1) — T (K)

Legend: s=3, s=-3, s=2, s=-2, s=1, s=-1, T$\cdot\frac{dP}{dT}$=0, s=0