

Collisional Processes of Antiprotonic Helium

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We shall review the current status of the theory of collisional processes of antiprotonic helium. The following questions will be discussed:

1. Formation and cascade transitions of exotic atoms. Primary populations of metastable states of antiprotonic helium.
2. Collisional quenching of metastable antiprotonic helium.
3. Shift and broadening of E1 spectral lines in antiprotonic helium.
4. Effects of collisions on M1 transitions of HFS states in the resonance microwave field.
5. Effective annihilation rates for long-lived states of antiprotonic helium ions in ultra-low-density target.

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