

# Summary of Discussion on Review of Current Status of Ion-Atom Collision Data

(Tom Kirchner)

# Preamble

Instead of reviewing the current status of ion-atom collision data the discussion focused on **assembling and prioritizing** a list of systems and quantities worthwhile studying in the context of the CRP

→ (partially) shared workplan?

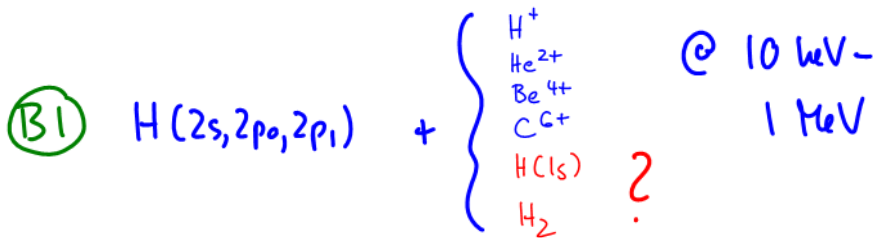
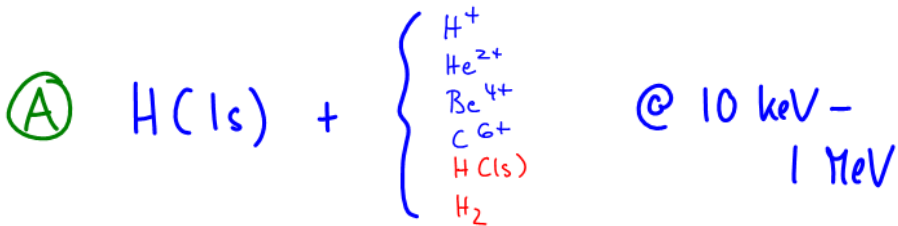
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1. Wishlist I: collision systems
2. Wishlist II: quantities of interest
3. Priorities

# Wishlist I: collision systems



# Wishlist I: collision systems

Ⓒ He ( $1s^2 \ ^1S$ )  
He ( $1s2s \ ^3S$ ) } + bare ions  
(at/up to 70 keV total energy)

Ⓓ Li ( $2s$ )  
Na ( $3s$ ) } + bare ions  
(at/up to 50 keV total energy)  
(partially stripped ions are of lower priority)

↑  
(check Schweinzer et al. papers)

## Wishlist II: quantities of interest

- Excitation probabilities and cross sections  
(*m*-resolved) A
- Density matrix elements  $\langle f | \hat{D} | f' \rangle$   
( $f, f' = 2s, 2p_o, 3s, 3p_o, 3d_o$ ) A
- Ionization probabilities and cross sections A, B  
(C, D)
- Charge exchange probabilities and cross sections A (B, C, D)
- (*nl*)-resolved excitation probabilities and cross sections (B) C, D

# Priorities

(i)  $H^+ - H(1s)$  : target excitation  
(m resolved;  $n=2,3$ )

(ii)  $H^+ - H(1s)$  : ionization + charge exchange

(iii)  $H^+ - H^*$

(iv)  $A^{q+} - \begin{cases} H(1s) \\ H^* \end{cases}$

...

Objective : come up with evaluated and recommended data