

# Problems of the Theory of $\alpha$ Particles

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- a) Theory of Neutral Heavy Quanta.  
i) ~~General scheme,~~ and light  
ii) Interaction with the Heavy Particles.  
b) i) Ordinary Forces between Unlike Particles  
iii) Like Particle Forces  
b) Interaction between Heavy Particles. 湯川  
i) Like Particle Force  
ii) ~~Ordinary Forces between Unlike Particles~~  
iii) Problem of the self-Energy of the Heavy Particle. 湯川  
iv) Theory of the Deuteron  
v) Neutron-Proton scattering  
vi) Proton-Proton scattering

- c) Interaction between Heavy and light Particles  
i)  ~~$\beta$ -disintegration,~~ 湯川  
ii) Neutro-Electric Effect.

Interaction of Heavy Quanta with the

- d) Electromagnetic Field 湯川  
i) general scheme, Magnetic Moment, etc.  
ii) Anomalous Mag. Moment of the Heavy Particle,

- Interaction  
e) Collision of High Speed Heavy Quanta with Matter 湯川