



**Structure Formation and Particle Acceleration by Collisionless Guide-Field
Magnetic Reconnection in Space, Laboratory and Astrophysical Plasmas**

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At its nonlinear stage three-dimensional collisionless guide-field magnetic reconnection causes structure formation. This leads to a two-stage acceleration of electrons near X-lines. Electrons are first pre-accelerated by magnetic-field-aligned (parallel) electric fields. At a nonlinear stage of 3D guide-field magnetic reconnection, when electric and magnetic fields become filamentary structured due to streaming instabilities, additional curvature-type electron acceleration takes place. As a result, a power-law spectrum of the accelerated electrons is formed.