

Extension of the variational sequence theory in mechanics to the Grassmann fibrations (prolongations) of 1-dimensional submanifolds is presented. The coordinate expressions of classes of differential forms, entering the variational sequence, are determined for arbitrary second order forms. In particular, the meaning of classes as the well-known variational objects (Lagrangian, Euler-Lagrange form, Helmholtz-Sonin form) is pointed out. The correspondence with the variational theory of parameter-invariant problems on manifolds is discussed in terms of the theory of jets (slit tangent bundles) and contact elements.