Beam Lines Design Codes: Dynamic Modeling Approach*, S.N. ANDRIANOV, A.I. DVOEGLAZOV, St. Petersburg State University - We present basic features of a new beam physics codes. The main aim of these codes to give suitable tools for beam lines design and studying of high-order aberrations influence on beam dynamics. The matrix formalism for Lie algebraic methods is put into the mathematical kern of these codes. The knowledge base for physical control elements (dipoles, quadrupoles and so on) is built from elementary physical objects. Every elementary object is related to a suitable block matrix in symbolic form. The total transfer map is "collected" from these elementary matrices. This approach allows to manipulate these models dynamicaly. The natural language interface provides comfortable and flexible dialogue between the designer and computer.