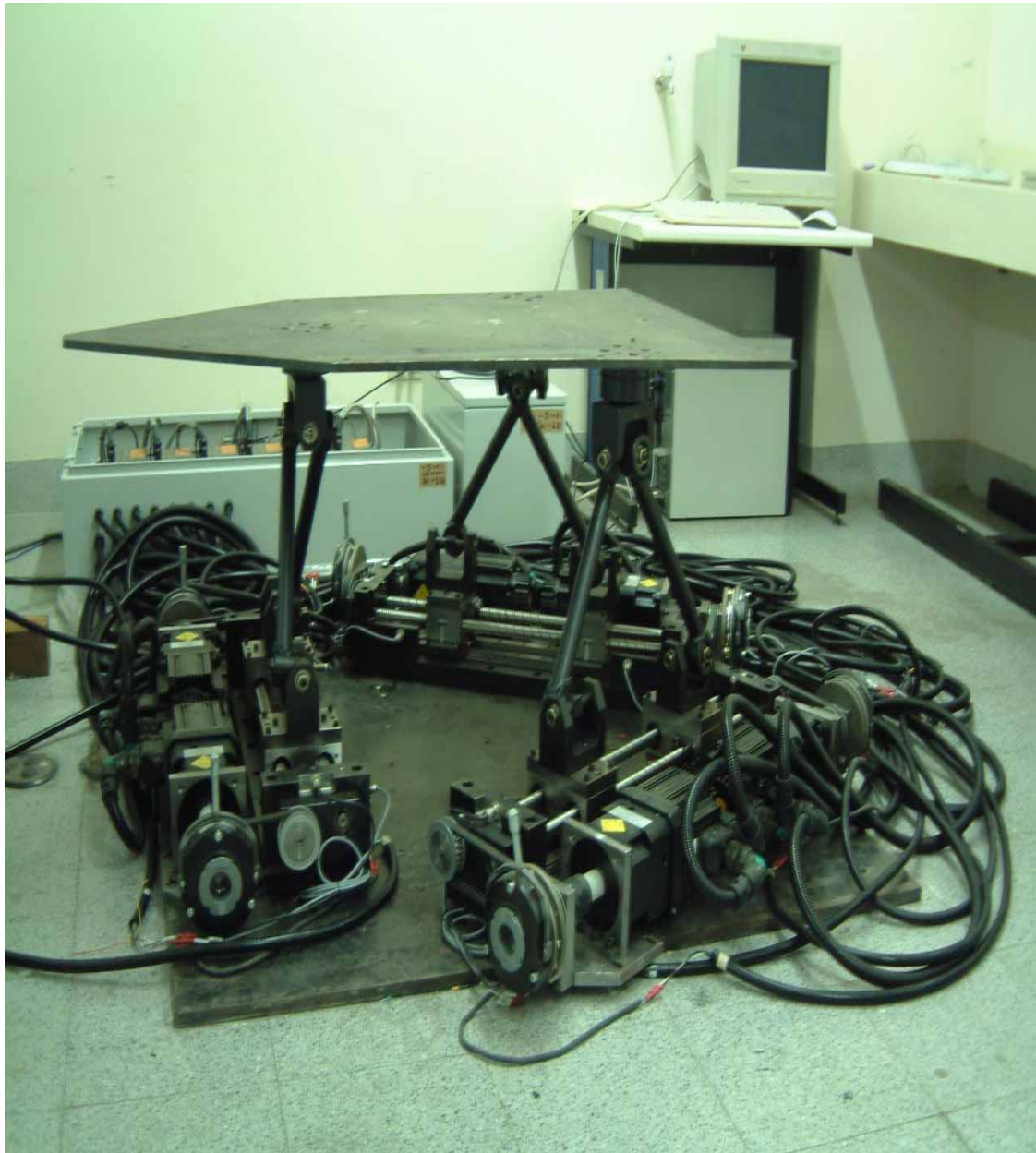Figure 1.1 Outline of this study
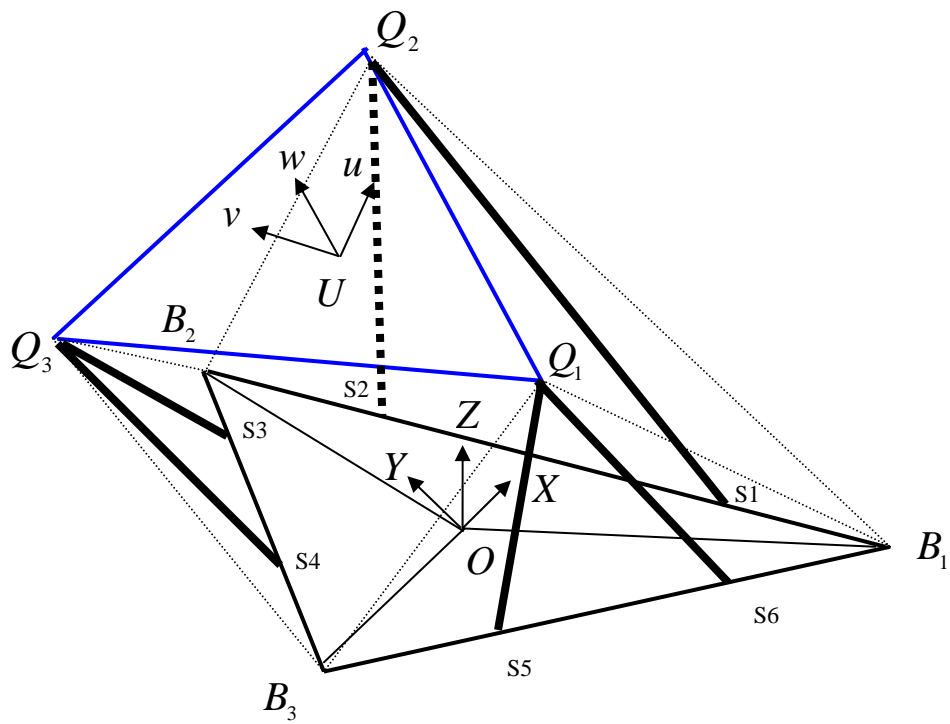
Figure.1.2 Prototype of SP-120
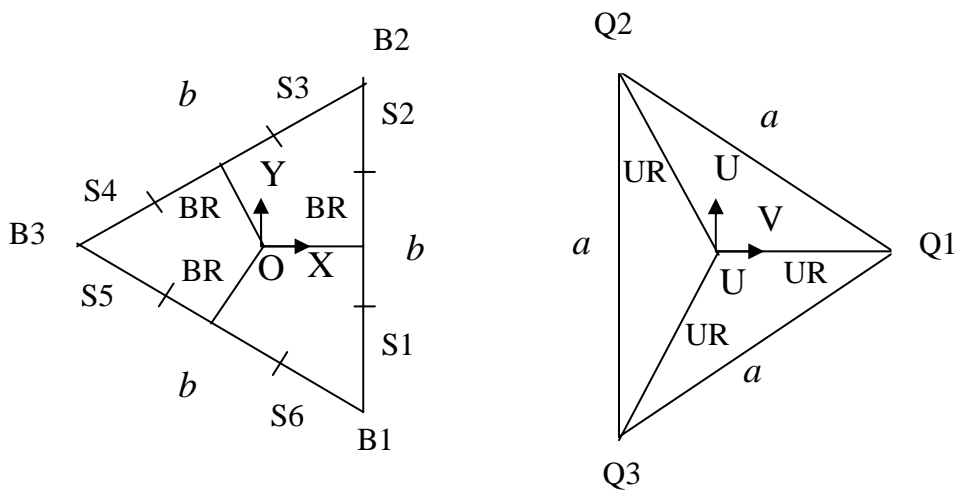
Figure. 2.1 Hexglider parallel manipulator

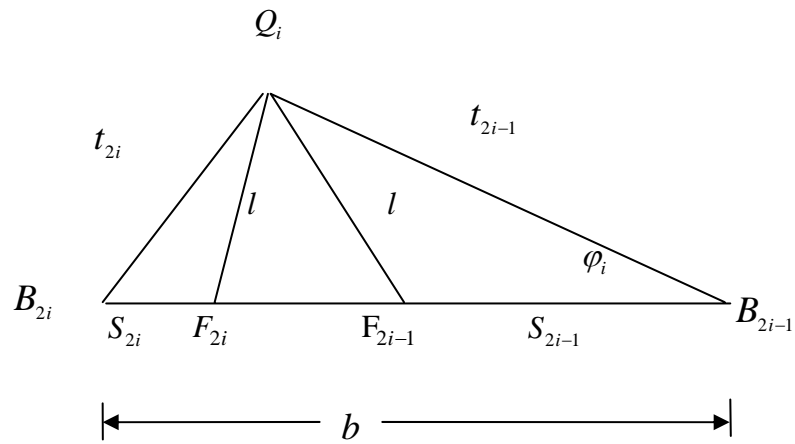Figure 2.2 Geometric relationships with respect to the mobile plate and the fixed plate

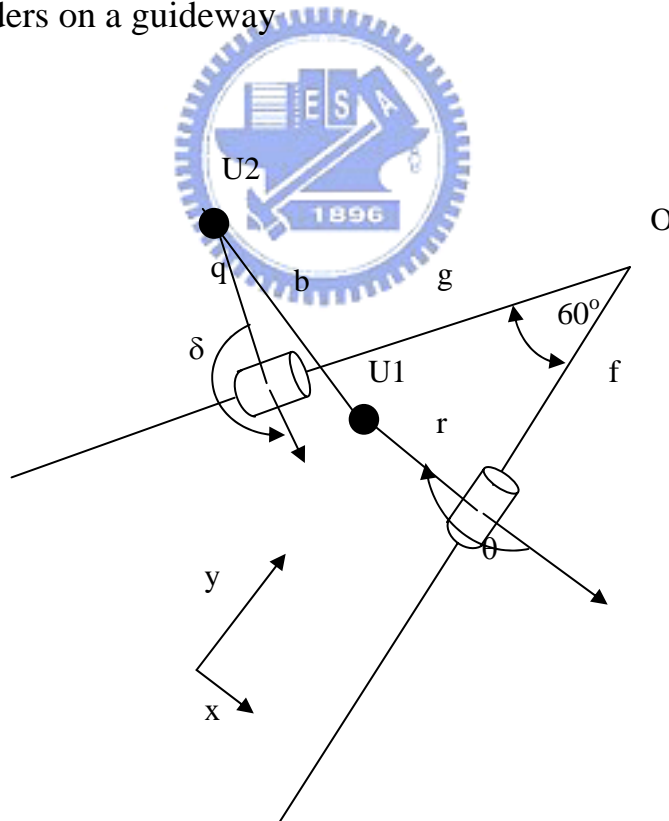Figure 2.3 Geometric relationships with respect to the two linkages and two sliders on a guideway
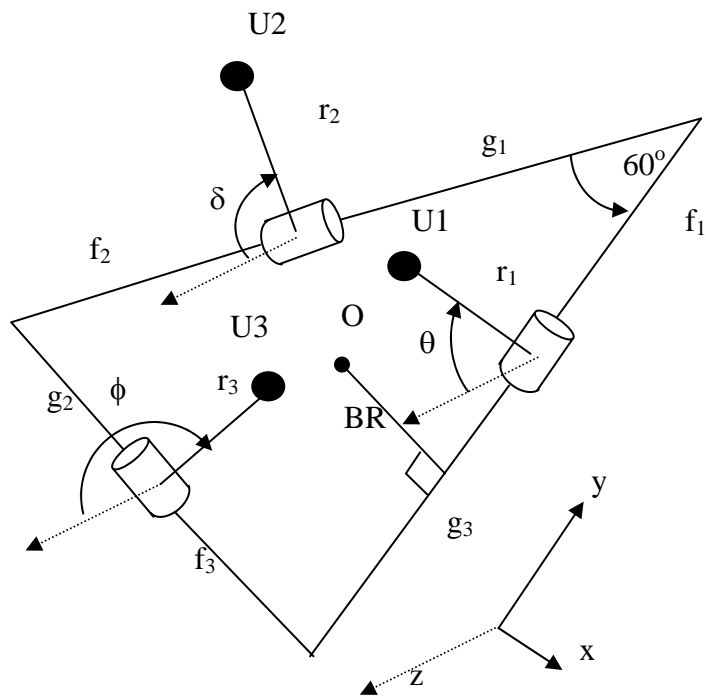

Figure 2.4 RSSR mechanism

Figure 2.5 Forward kinematics of the hexglider manipulator

Dimensional error
- Linkage Length error

Positioning error
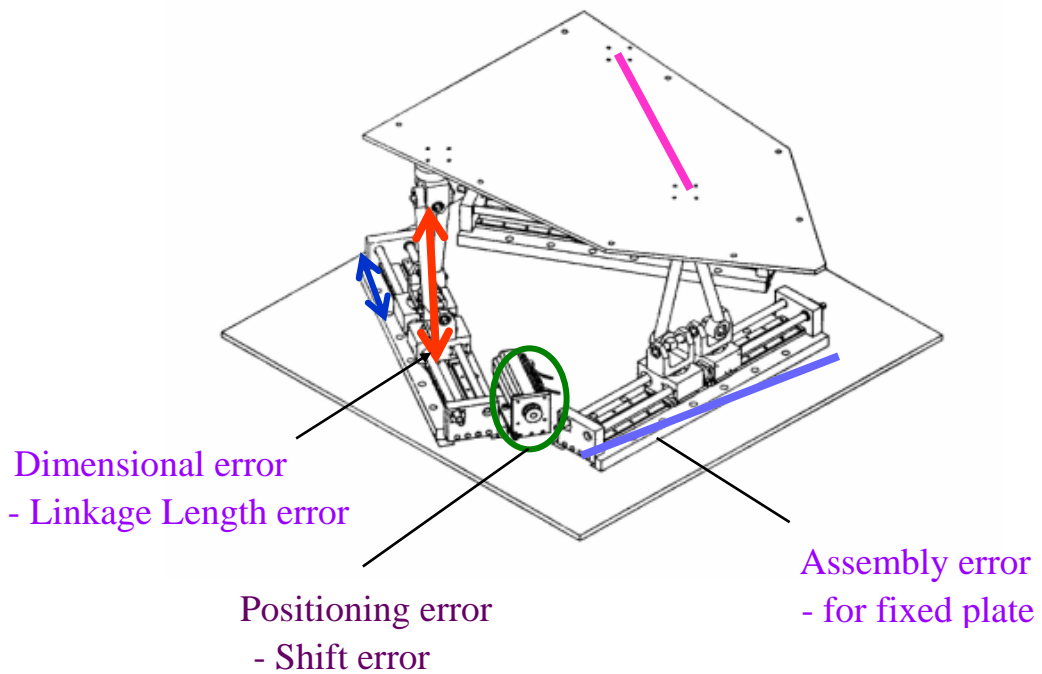- Shift error

Assembly error
- for fixed plate

Figure 3.1 Geometric error sources of a hexglider manipulator
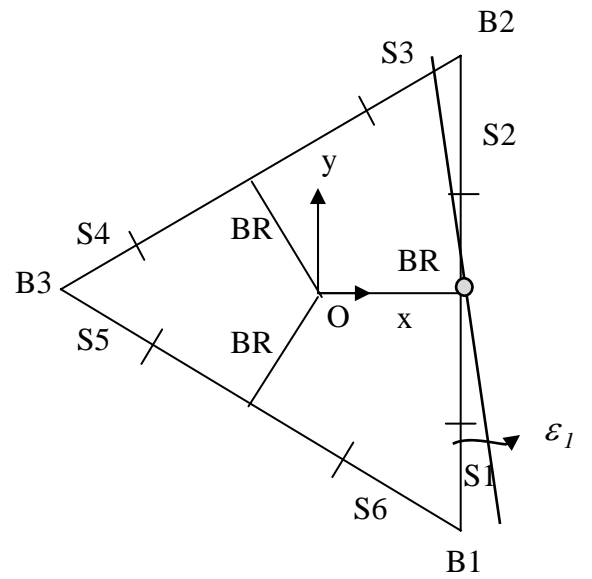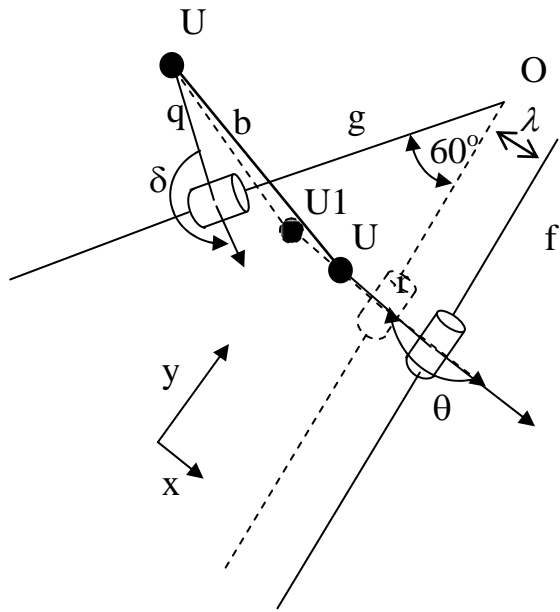under investigation

Figure 3.2 (a) Guideway translation error

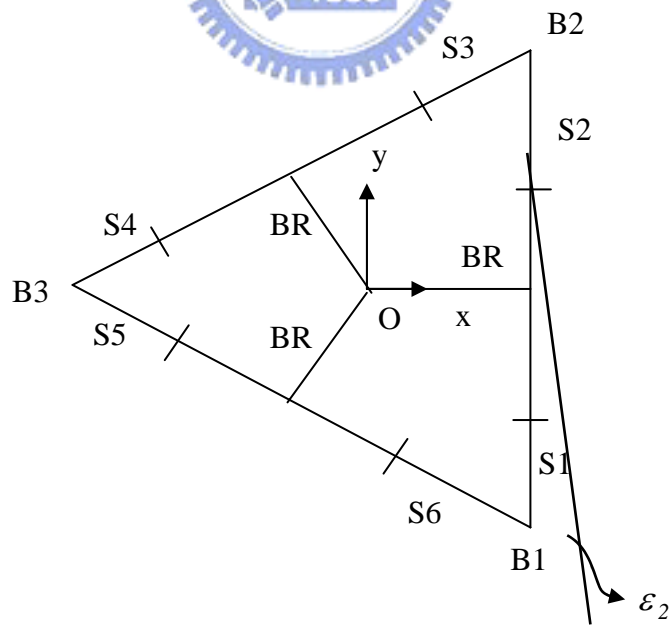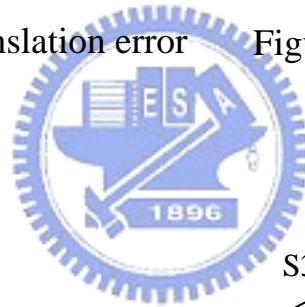Figure 3.2 (b) Guideway rotation error I

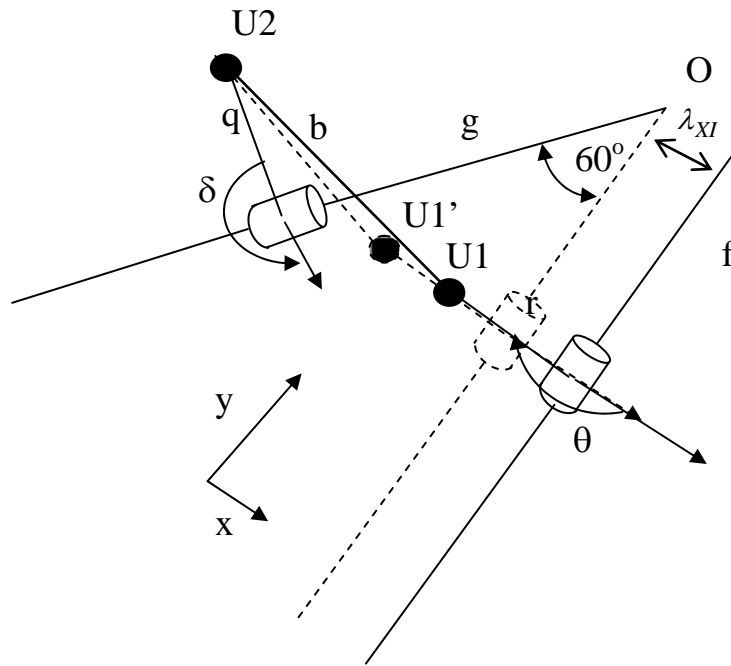Figure 3.2 (c) Guideway rotation error II

Figure 3.3 Guideway translation error along X-axis
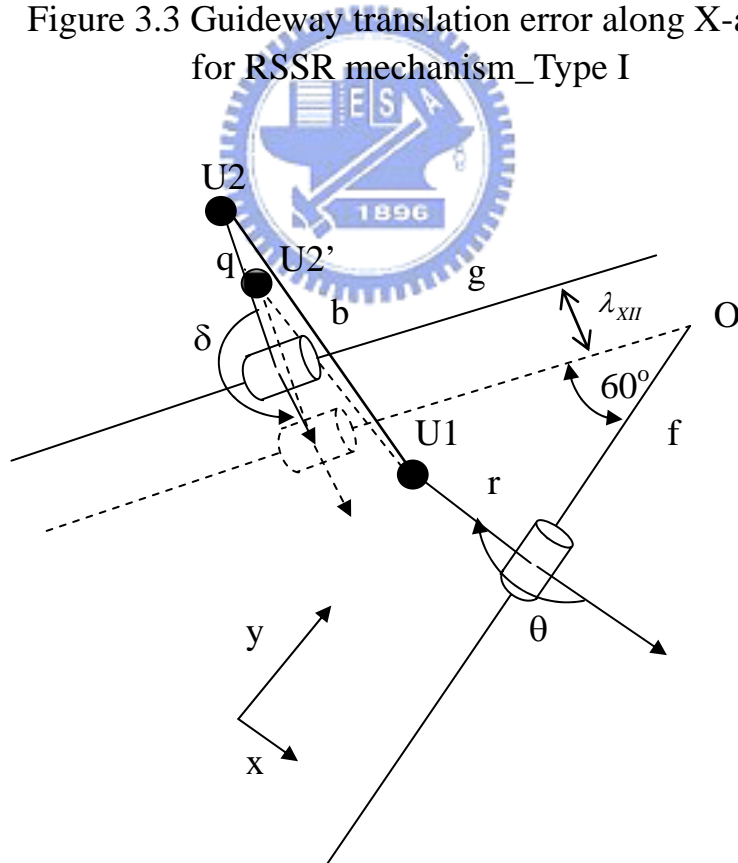for RSSR mechanism_Type I

Figure 3.4 Guideway translation error along X-axis
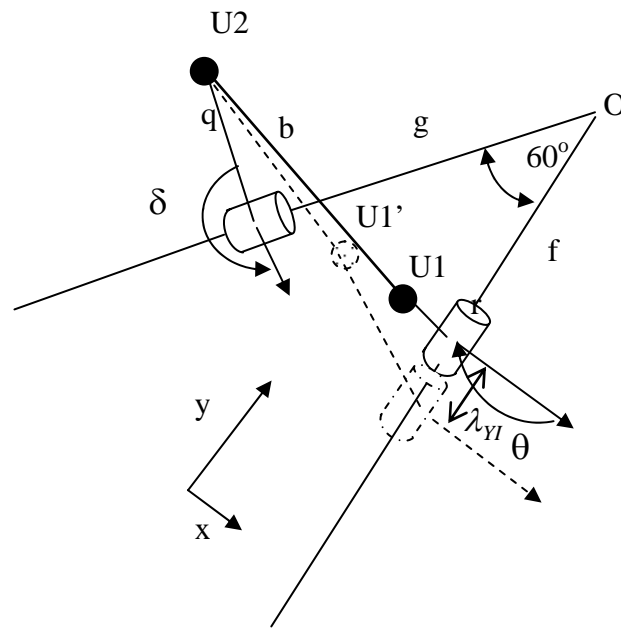for RSSR mechanism_Type II

Figure 3.5 Guideway translation error along Y-axis
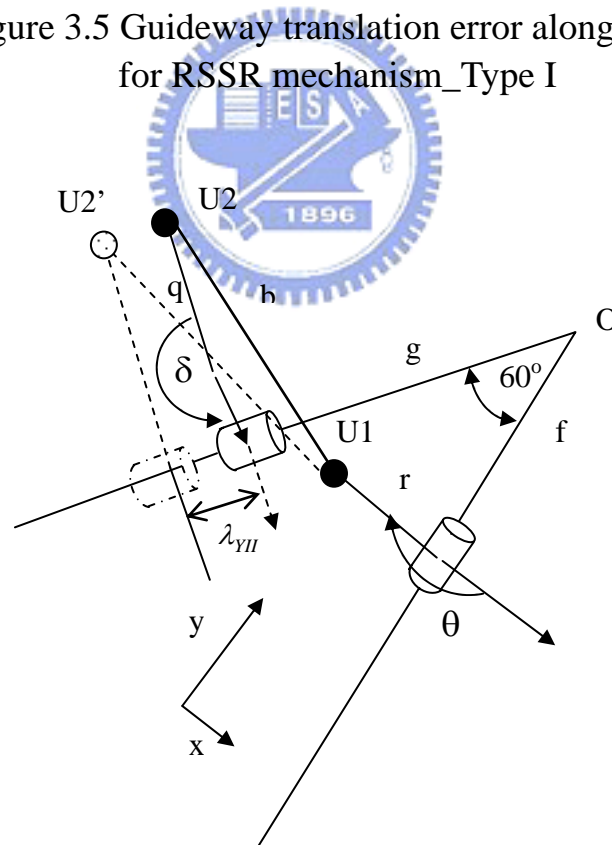for RSSR mechanism_Type I

Figure 3.6 Guideway translation error along Y-axis
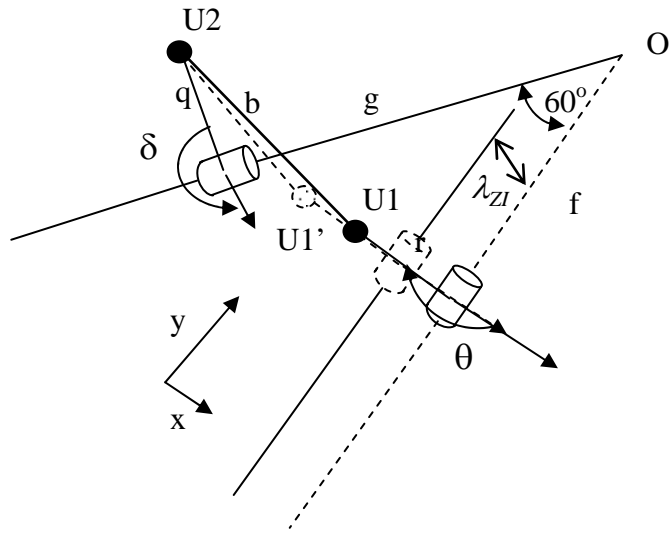for RSSR mechanism_Type II

Figure 3.7 Guideway translation error along Z-axis
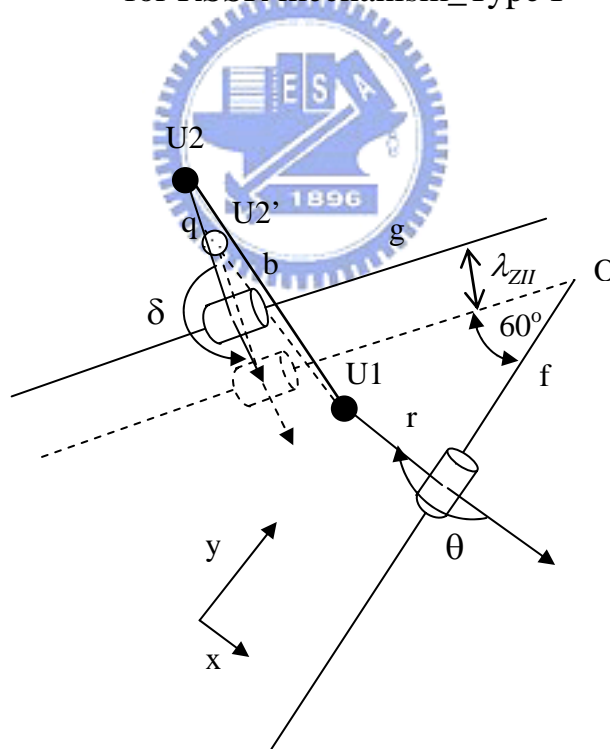for RSSR mechanism_Type I

Figure 3.8 Guideway translation error along Z-axis
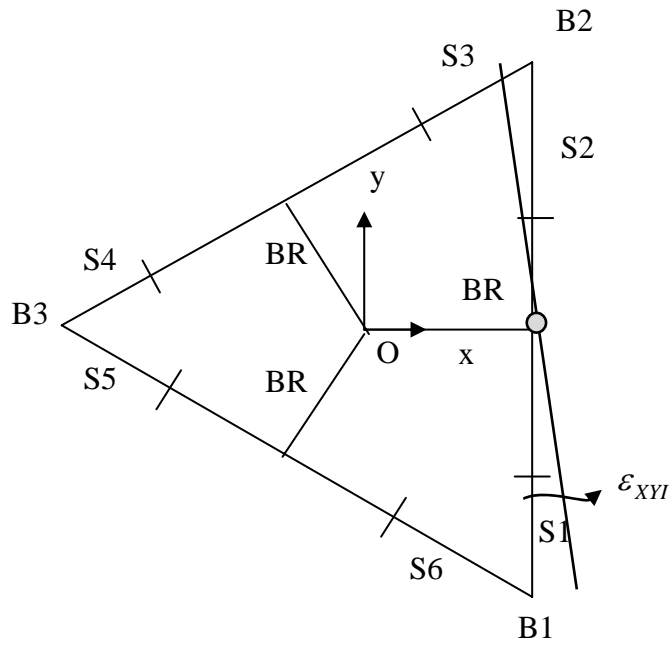for RSSR mechanism_Type II

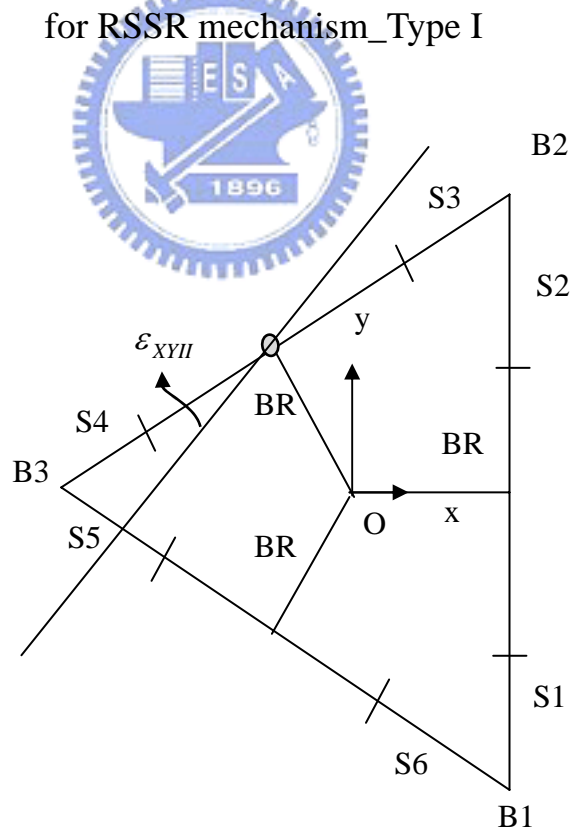Figure 3.9 Guideway rotation error on XY plane
for RSSR mechanism_Type I

Figure 3.10 Guideway rotation error on XY plane
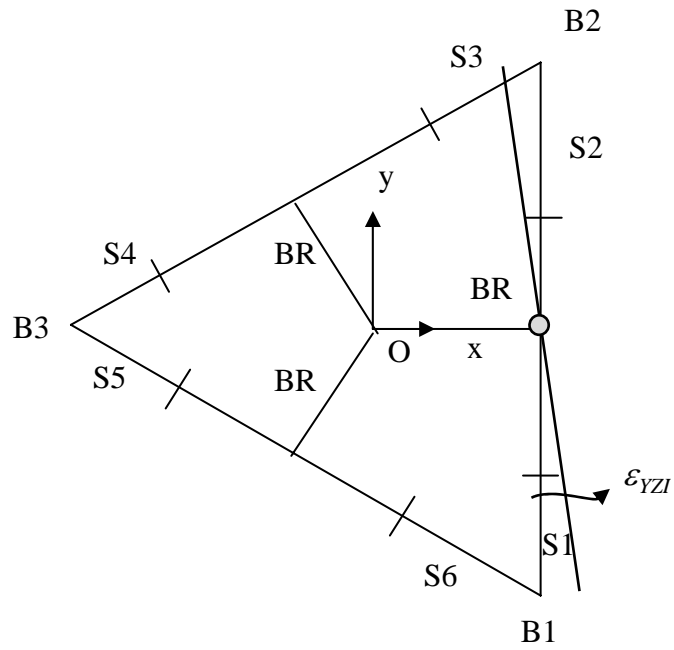for RSSR mechanism_Type II

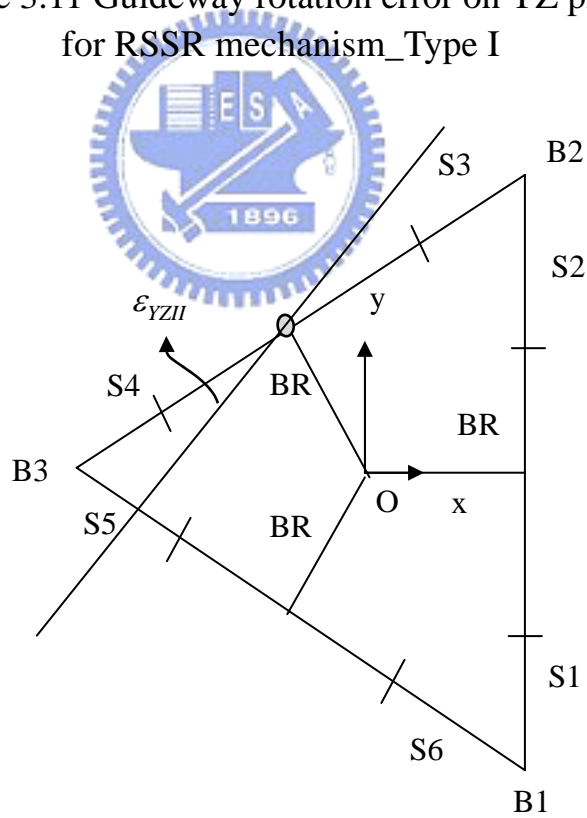Figure 3.11 Guideway rotation error on YZ plane
for RSSR mechanism_Type I

Figure 3.12 Guideway rotation error on YZ plane
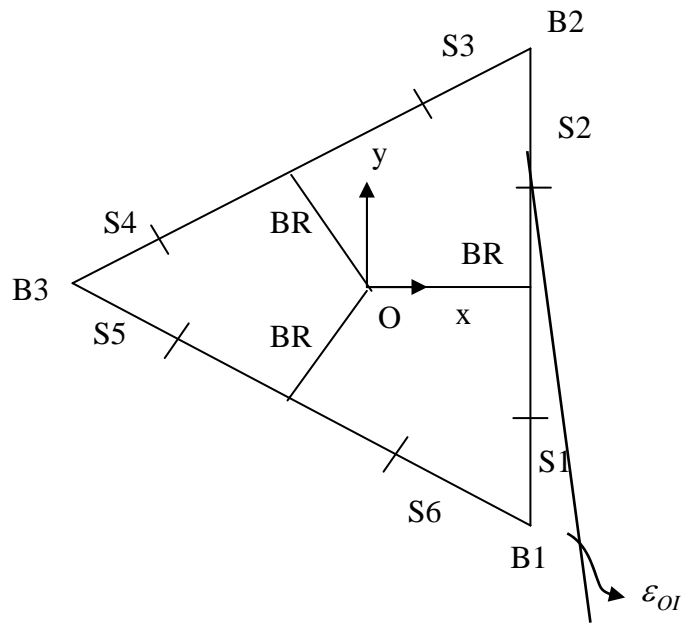for RSSR mechanism_Type II

Figure 3.13 Guideway rotation error about the center of the base
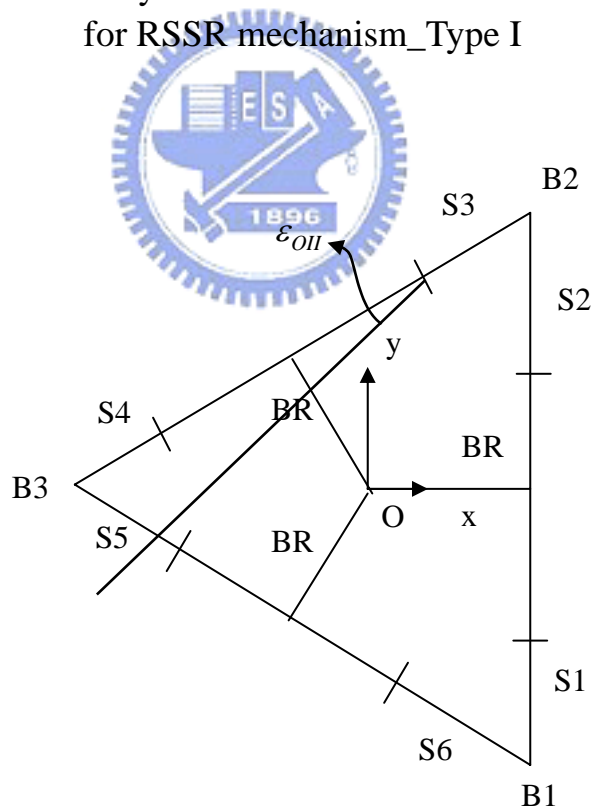for RSSR mechanism_Type I

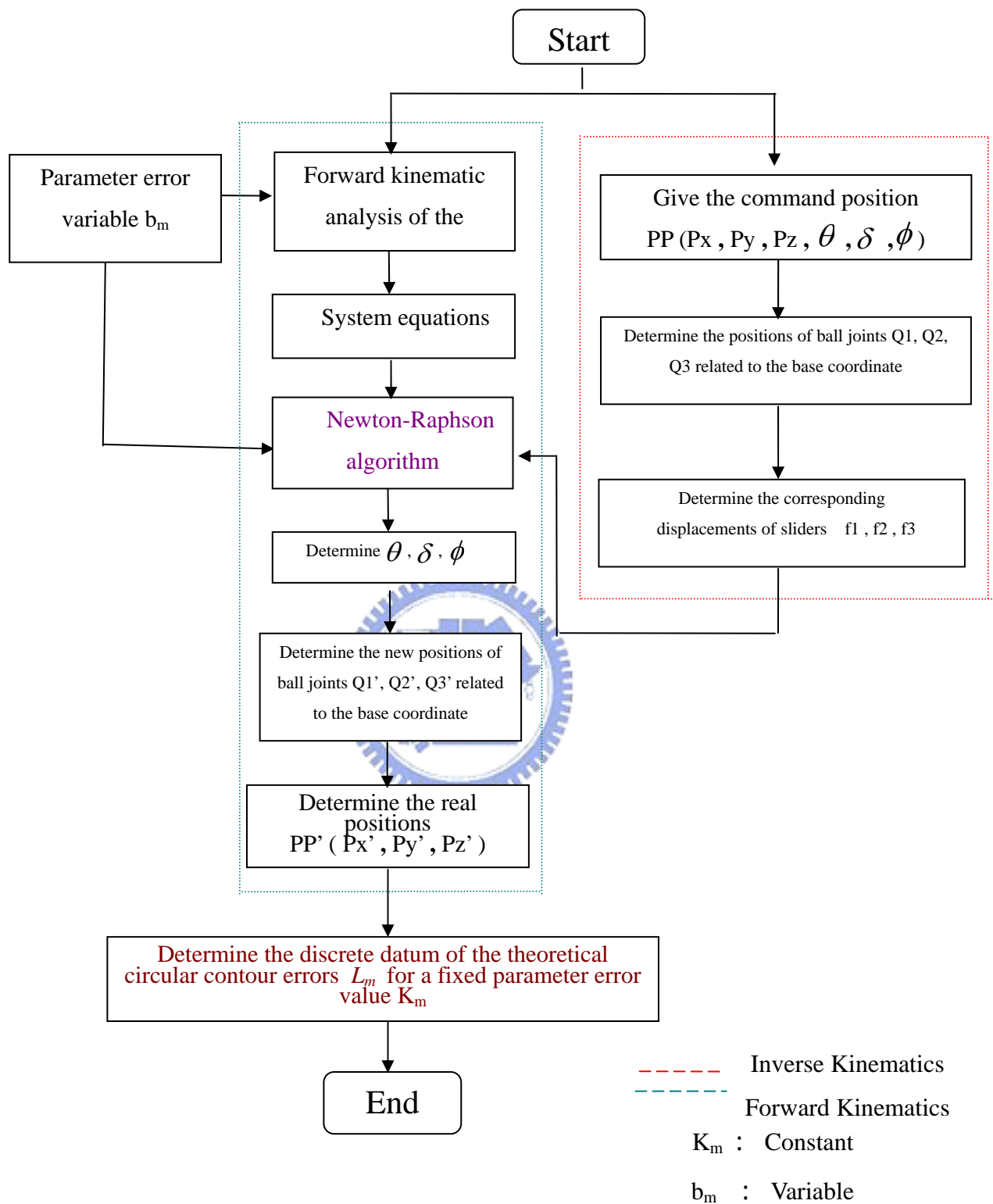Figure 3.14 Guideway rotation error about the center of the base
for RSSR mechanism_Type II

Figure. 3.15 Procedure of modeling the overall profile error