State of Art on Rocking Foundation

***Abstract*—** The conventional fixed-base design of structures allows inelastic deformations on certain structural components and provides seismic energy dissipation at the cost of severe damage to the structure. Unlike conventional structures, in rocking foundation structures, the constraint in between the structure and the foundation is released so that the structure can rock back and forth under the influence of a ground motion because of the natural re-centering tendency and stability of rocking foundation structures. Since the 19th century, many numerical and experimental studies have been performed to study the behavior of conventional fixed-base and rocking foundations which have demonstrated the effectiveness of rocking foundation in reducing the seismic impact and the ductility demand required in structural design. Also, rocking foundation design saves the construction cost of superstructure and foundation. This paper reviews the development history of the numerical and experimental studies of rocking foundation behavior and summarizes the research results.

Keywords— rocking foundation, conventional fixedbase foundation, numerical studies, experimental studies