Supervisor en CIO:	Dr. Fernando Mendoza Santoyo
Tutor Académico en UBFC:	Dr. Micky Rakotondrabe
Supervisor de estancia:	Dr. Benjamin Boudon
Sinodales:	Dr. Yongxin Wu (Sinodal Externo - UBFC, Secretario) Dr. Benjamin Boudon (Supervisor de estancia y Sinodal Externo - UBFC, Vocal) Dr. Abdenbi Mohand Ousaid (Sinodal Externo - UBFC, Presidente del Jurado)
Tesis:	"MODELING, INDENTIFICATION AND ANALISYS OF THE DIMANIC BEHAVIOR OF RECONFIGURABLE PARALLEL ROBOT"

Resumen:

Serial robots are widely used in industry due to the great development, even they have a lot of issues, compared to their serial counterparts, parallel robots have numerous advantages as better rigidity, cycle time and positioning precision. However, the reduced size of their operational workspace is a drawback that limits their use in the industry. Kinematic analysis explains how the workspace is divided in aspects, separated from each others by so-called singularities; this problem requires more research and troubleshooting. Among existing solutions for workspace enlargement, more development is needed to enhance the performance of the parallel robots. Software tools haven been used to simulate physical system with precision in many fields, a realistic parallel robot could be reached with the Appropriate approach, this leads to a fast and cheaper way to test the dynamics even without working with the real robot, anyway, validation is always needed to test the control strategies and solution made in this way. In this work, a first iteration in the modelica language was performed as close to the real system in terms of mechanical and electrical behavior, this brings a help full tool to analyze the dynamics of the robot, development of control logic and every subsystem individually if its needed. The simulation is based in a 2-degree of freedom planar parallel robot named DexTAR, a MATLAB program was developed based in a mathematical approach about the geometric parameters of the actual robot to map the workspace and plan trajectories avoiding singularities as the solving of this problem is not attended in this work. Overall, with this kind of tools it's possible to test solutions in this kind of problematic.