ASML Robo Team

List of publications

1. **Feedforward signal prediction for accurate motion systems using digital filters**
   Hans Butler
   *Mechatronics, vol 22, pp. 827-835*

   The kick of the ball is done with a solenoid actuator which requires a very accurate control using feedforward control. The following study shows how this is succeeded using digital filters.

2. **Minimizing cross-talk in high-precision motion systems using data-based dynamic decoupling**
   Marcel Heertjes, Arjan van Engelen
   *Control Engineering Practice, vol 19, pp. 1423-1432*

   Design limitations can cause crosstalk between motors. This crosstalk can be minimized by using data based dynamic decoupling.

3. **Learning in the synthesis of data-driven variable-gain controllers**
   Marcel Heertjes, Bram Hunneken, Nathan van de Wouw, Henk Nijmeijer
   *ACC 2013, Washington DC, USA, pp. 6700-6705*

   This paper shows the use of variable gain controllers as a synthesis for learning and optimization techniques. These techniques are need for optimizing the control of the robot based on given strategies.

4. **Frequency domain performance analysis of nonlinearly controlled motion systems**
   Alexey Pavlov, Nathan van de Wouw, Sasha Pogromsky, Marcel Heertjes, Henk Nijmeijer
   *CDC 2007, New Orleans, Louisiana, USA, pp. 1621-1627*

   This paper shows the frequency domain performance analysis of nonlinear controlled motions systems such as those used for robot movement control.

5. **Stability analysis and controller design for a system with hysteresis**
   Ruiyue Ouyang
   *PhD thesis, 2013*

   Given the complexity of the control system and its collaboration with the control and vision electronics in robotics, there is a certain propagation delay. The following study is over the stability analysis and controller design for systems with Hysteresis.