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A SAG MILL SIMULATION PLATFORM ENABLING REINFORCEMENT LEARNING CONTROL EVALUATION
BY ITV AND AI CENTER CANADA
Partial Report, Project OptiPlant

ITV Authors:
Thomás Vargas
Carlos Sacramento
Luciano Cota
Thiago Euzébio

External Authors:
Bala Manickam
Ashish Kumar

Ouro Preto
Minas Gerais, Brazil

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EXECUTIVE SUMMARY

The path toward Deep Reinforcement Learning (DRL) applications in real plants requires a first step into tests on simulation platforms. The simulation enables fast and secure learning for the control algorithm, which minimizes development time and investments. In this way, ITV and AI Center have worked together to provide a reliable platform for testing Deep Reinforcement Learning control algorithms in mineral processing plants’ digital models. This document describes a SAG milling circuit simulation (running in Brazil) and how it can communicate in real-time with the DRL algorithms (running in Canada).
ABSTRACT

Simulation platforms enables fast and secure development and testing of control strategies, also minimizing work time and investments. ITV and AI Center have worked together to provide a reliable platform for testing Deep Reinforcement Learning control algorithms in mineral processing plants' digital models. This document describes a SAG milling circuit simulation (running in Brazil) and how it can communicate in real-time with the DRL algorithms (running in Canada).

Keywords: Reinforcement learning. Digital model. Process control