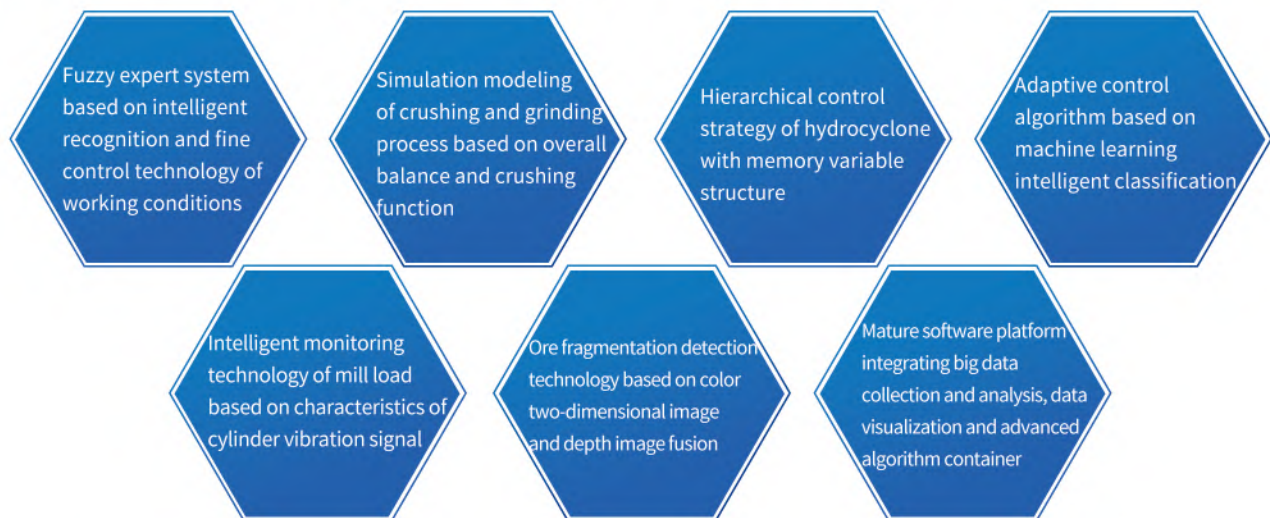


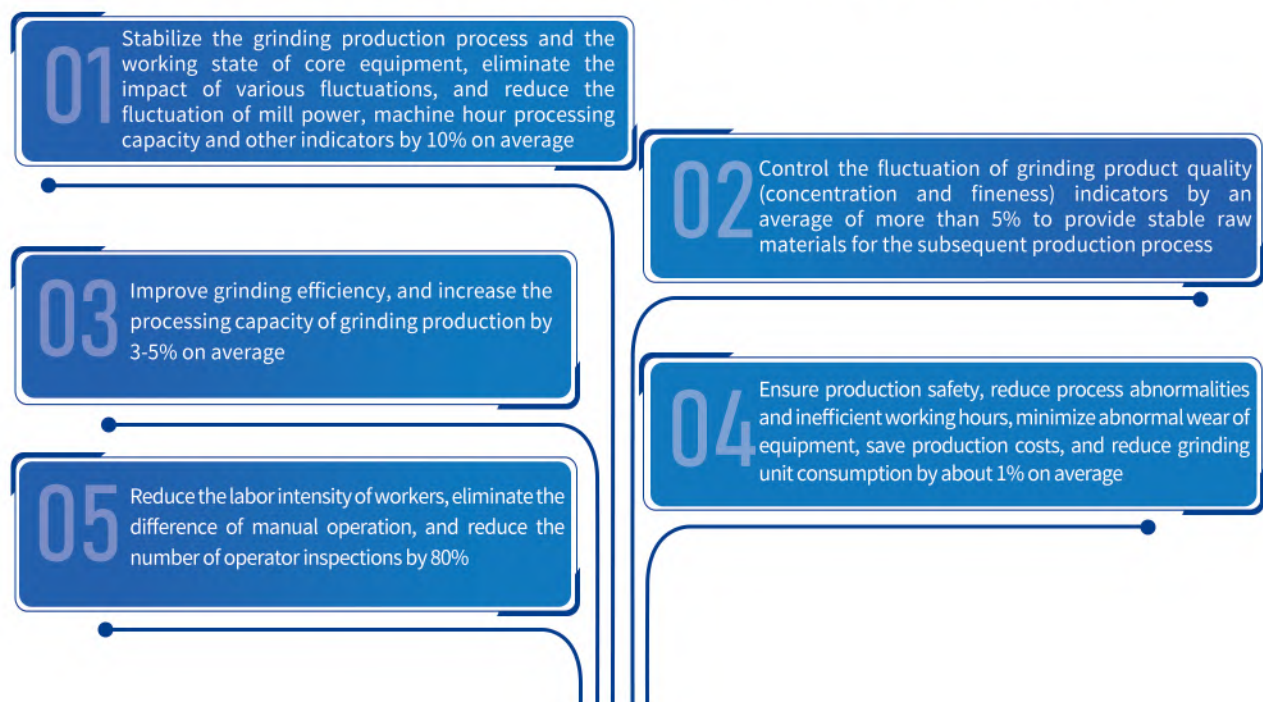
Grinding Expert and Digital Twin System (BPM-G)

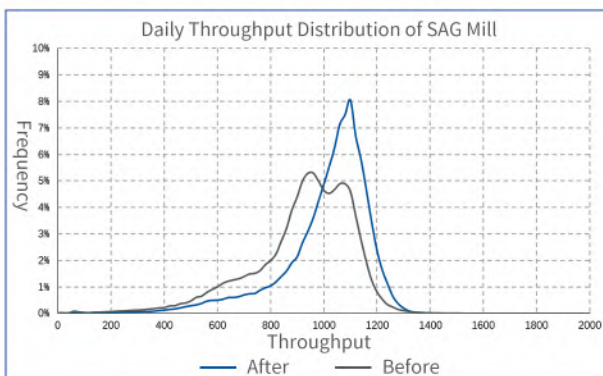
Grinding expert system and digital twin system synthesizing fuzzy Control, expert rule and model predictive control (BPM-G), which realize fault diagnosis, index prediction and optimal control of the process by accurately identifying and simulating the working conditions of key equipment in the grinding and classification process. The optimization control realizes the automatic optimization of the best working point of the process, eliminates the defects caused by manual operation, stabilizes the equipment status and key parameters of the process, so as to improve the ore handling capacity, stabilize the grinding product quality, extend the service life of the lining plate and reduce the unit production consumption by adjusting the ore feeding amount, water feeding amount, mill speed, classification pump frequency and other operating parameters of the grinding process in real time.

The grinding expert system and digital twin system core technologies:

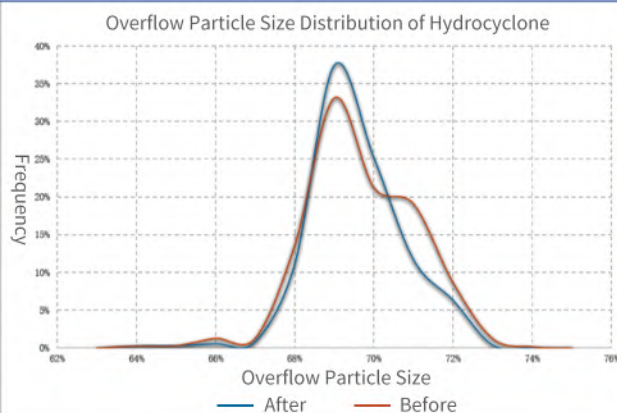


The industrial application effects of several concentrators are as follows:





Comparison of daily throughput of SAG mill



Classification expert control effect

The system has been successfully applied in different grinding processes (SABC, SAB, ball milling classification, rod milling classification) of many well-known mines at home and abroad, and the technology is mature and reliable.

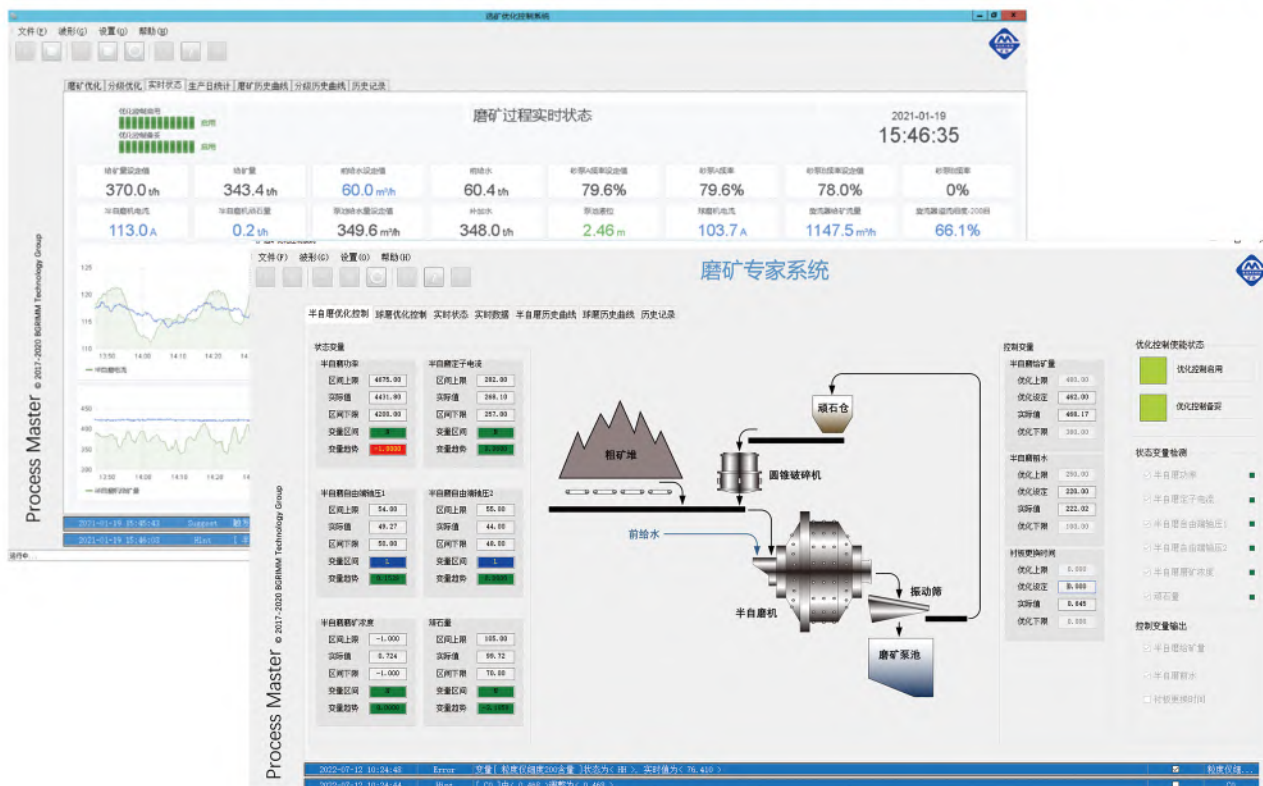


Fig.1 System HMI



Data visualization interface of grinding expert system



Digital twin and 3D visualization interface of grinding expert system

Grinding simulation interface of grinding expert system

