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# LIST OF ABBREVIATIONS

| | |
|---|---|
| ANFIS | Adaptive Network-based Fuzzy Inference System |
| APR | April |
| ARIMA | Autoregressive Integrated Moving Average |
| AUG | August |
| AverObs | Average Observe |
| AverSim | Average Simulation |
| B | Bottom Tunnel |
| CFRD | Concrete Face Rock fill Dam |
| cms | Cubic Meter per Second |
| DEC | December |
| DFT | Discrete Fourier Transform |
| DMs | Decision Making |
| DPSA | Dynamic Programming Successive Approximation |
| DSSVue | Data Storage System Visual Utility Engine |
| EDL | Electricite du Lao |
| EDL-Gen | Electricite Du Lao-Generation Public Company |
| EG | Energy Generation |
| EI | Efficiency Index |
| Ev | Evaporation |
| FEB | February |
| FFLP | Fuzzy linear Programming Model |
| FFT | Fast Fourier Transform |
| FT | Thosmas Fiering |
| GA | Genetic Algorithm |
| GW | Giga watts ($10^9$ W) |
| GWh | Giga Watt Hours ($10^9$Wh) |
| H | Head (m) |
| Ha | Hectare |
| HEC | Hydrology Engineering Center |
| HPP | Hydropower Plants |

| | |
|---|---|
| $HWL_F$ | Head Water Level First Time |
| $HWL_E$ | Head Water Level End Time |
| IPP | Independent Power Producer |
| IPPe | Independent Power Producer Export |
| IPPd | Independent Power Producer Domestic |
| IPSO | Improved Particle Swarm Optimization |
| JAN | January |
| JUL | July |
| JUN | June |
| Km | Kilometers (1,000 m) |
| $Km^2$ | Square Kilo Meter |
| KWh | Kilo Watt Hour |
| Lao PDR | Lao People's Democratic Republic |
| LRC | Lower Rule Curve |
| LWC | Little Watery Criterion |
| MAD | Mean absolute Deviation |
| MAPE | Mean absolute Percentage Error |
| MAR | March |
| MAY | May |
| MCM | Million Cubic Meter |
| MLE | Maximum Likelihood Estimation |
| MW | Mega Watts (106 W) |
| MWh | Mega Watt – Hours ($10^6$Wh) |
| MVA | Mega Volt – Ampere ($10^6$ VA) |
| $m^3/s$ | Cubic Meter Per Second |
| masl | Meter above sea level |
| mm | Mille Meter |
| NCC | National Control Center |
| NOV | November |
| NSGA-II | NON-dominated sorting genetic algorithm II model |
| NWC | Normal Watery Criterion |
| Obs | Observe Data |

| | |
|---|---|
| OCT | October |
| OC | Operation Curve |
| P | Power (W) |
| Pmax | Power Generation Maximum |
| Pmin | Power Generation Minimum |
| PSO | Particle Swarm Optimization |
| POA | Progressive Optimization Algorithm |
| Qin | Water Inflow |
| Qs | Water Release from Spillway |
| Qt | Water Discharge Turbine |
| r | Pearson Correlation Coefficient |
| RCC | Roller Concrete Compact |
| REev | Reservoir Elevation |
| ResSim | Reservoir Simulation |
| RMES | Root Mean Square Error |
| R/min | Round per Minute |
| SEP | September |
| Sim | Simulation Results |
| SPSS | Statistical Package for Social Sciences |
| SSARR | Streamflow Synthesis and Reservoir Regulation |
| St | Water Storage in Reservoir |
| URC | Upper Rule Curve |
| USD | United stated Dollar |
| VWC | Very Watery Criterion |
| WNN | Wavelet Neural Network |
| WCLR | Watery Criterion that Little Rather |
| WCVR | Watery Criterion that Very Rather |