– Supplementary Material –
Machine Learning-Based Resistance Prediction of AMECRC Hull

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SVM		Efficient Linear		Kernel	
Box constraint	0.001 – 1000	Regularization Strength	5.291e-08 – 529.1005	Learner	SVM, Least Squares Kernel
Kernel scale	0.001 – 1000	Learner	SVM, Least squares	Kernel scale	0.001 – 1000
Epsilon	3.1931e-06 – 0.31931	Regularization	Ridge, Lasso	Regularization Strength	5.291e-06 – 5.291
Kernel function	Gaussian, Linear, Quadratic, Cubic	-	-	Number of expansion dimensions	100 – 10000
Standardize data	true, false	-	-	Epsilon	3.1931e-06 – 0.31931
-	-	-	-	Standardize data	true, false
GPR			Neural Network		
Sigma	0.0001 – 0.050037		Number of fully connected layers	1–3	
Basis function	Constant, Zero, Linear		Activation	ReLU, Tanh, Sigmoid, None	
Kernel function	Nonisotropic Exponential, Nonisotropic Matern 3/2, Nonisotropic Matern 5/2, Nonisotropic Rational Quadratic, Nonisotropic Squared Exponential, Isotropic Exponential, Isotropic Matern 3/2, Isotropic Matern 5/2, Isotropic Rational Quadratic, Isotropic Squared Exponential		Standardize data	Yes, No	
Kernel scale	0.001-1000		Regularization strength	5.291e-08 – 529.1005	
Standardize data	true, false		First layer size	1-300	
-	-		Second layer size	1-300	
-	-		Third layer size	1-300	

Table 1. Ranges of hyperparameters for optimization of different ML algorithms

SVM		Efficient Linear		Kernel	
Box constraint	116.28	Regularization Strength	4.8963	Learner	Least Squares Kernel
Epsilon	0.0090766	Regularization	Ridge	Regularization Strength	0.15986
Kernel function	Cubic	Learner	Least squares	Number of expansion dimensions	9991
Standardize data	true	-	-	Kernel scale	4.8918
-	-	-	-	Standardize data	No
GPR				Neural Network	
Sigma	0.0004493			Number of fully connected layers	3
Basis function	Zero			Activation	Tanh
Kernel function	Isotropic Rational Quadratic			Standardize data	Yes
Kernel scale	0.014428			Regularization strength	6.6515e-08
Standardize data	false			First layer size	116
-	-			Second layer size	83
-	-			Third layer size	281

Table 2. Optimized values of hyperparameters for different ML algorithms