## Residual diagnostic plots for models in 'Evaluating the transferability of empirical models of debris-covered glacier melt.'

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Figure 1: Boxplot of Model KM1 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 2: Normal quantile plots of Model KM1 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 3: Boxplot of **Model KM2** residuals, grouped by the random effects *Glacier* and *Year*.



Figure 4: Normal quantile plots of **Model KM2** residuals, grouped by the random effects *Glacier* and *Year*.



Figure 5: Boxplot of **Model KM3** residuals, grouped by the random effects *Glacier* and *Year*.



Figure 6: Normal quantile plots of Model KM3 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 7: Boxplot of Model KO1 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 8: Normal quantile plots of Model KO1 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 9: Boxplot of Model KO2 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 10: Normal quantile plots of Model KO2 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 11: Boxplot of Model KP1 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 12: Normal quantile plots of Model KP1 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 13: Boxplot of Model KP2 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 14: Normal quantile plots of Model KP2 residuals, grouped by the random effects *Glacier* and *Year*.



Figure 15: Boxplot of  $Model \ KM_d 1$  residuals, grouped by the random effect Year.



Figure 16: Normal quantile plots of **Model KM\_d 1** residuals, grouped by the random effects *Glacier* and *Year*.



Figure 17: Boxplot of Model  $\mathrm{KM}_{\mathrm{d}}2$  residuals, grouped by the random effect Year.



Figure 18: Normal quantile plots of **Model KM\_d 2** residuals, grouped by the random effects *Glacier* and *Year*.