Damage function	New year storm	storm Dagmar	storm Nina
Exponential	0.57	0.64	0.66
Klawa	0.53	0.68	0.57
Modified Prahl	0.58	0.66	0.68
Prahl	0.58	0.67	0.67

Table S1. Spearman's rank correlation between observed and estimated losses of individual models for the three most damaging events.
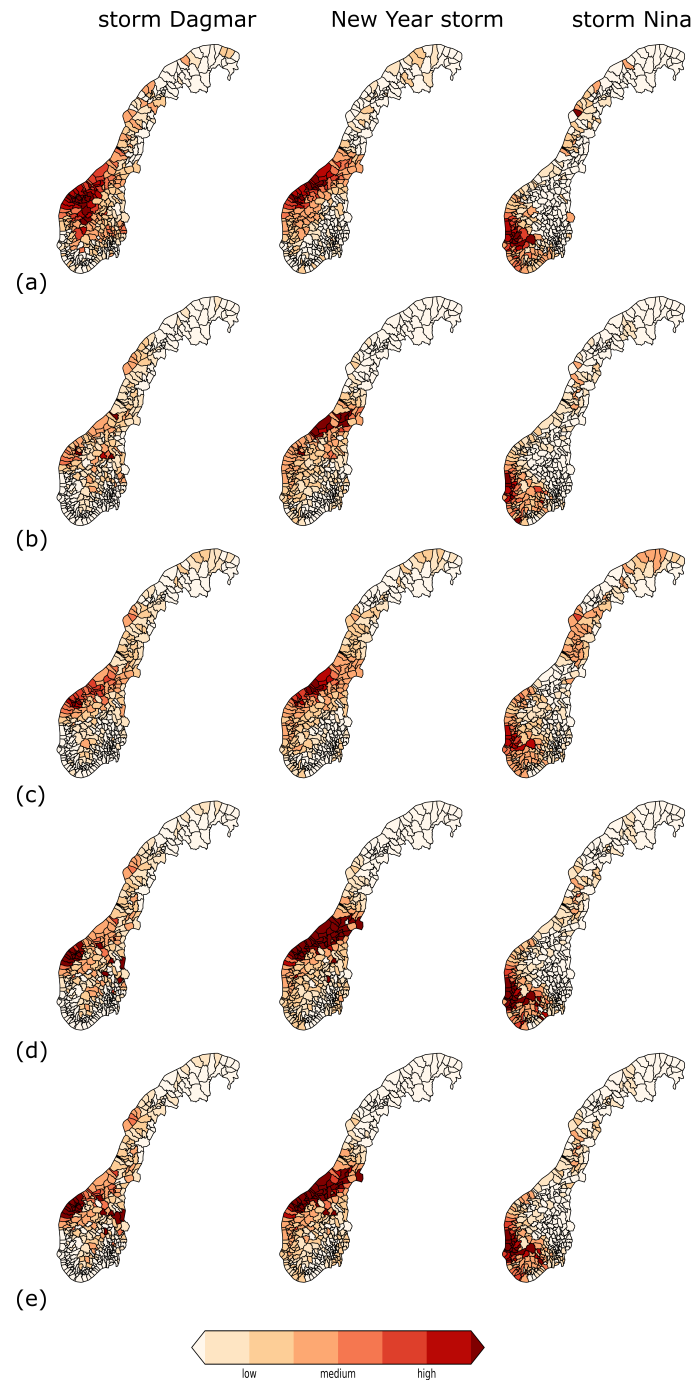
Figure S1. Spatial patterns of observed and estimated losses for the three most damaging events, where (a) display the observed losses and (b), (c), (d) and (e) are their estimates from the exponential, Klawa, modified Prahl and Prahl models respectively. The class boundaries of the colour bar are the 20th, 40th, 60th, 80th, 85th, 90th and 95th percentiles of the observed losses of their respective events. Table S1 shows the spatial correlations between observed and estimated losses.
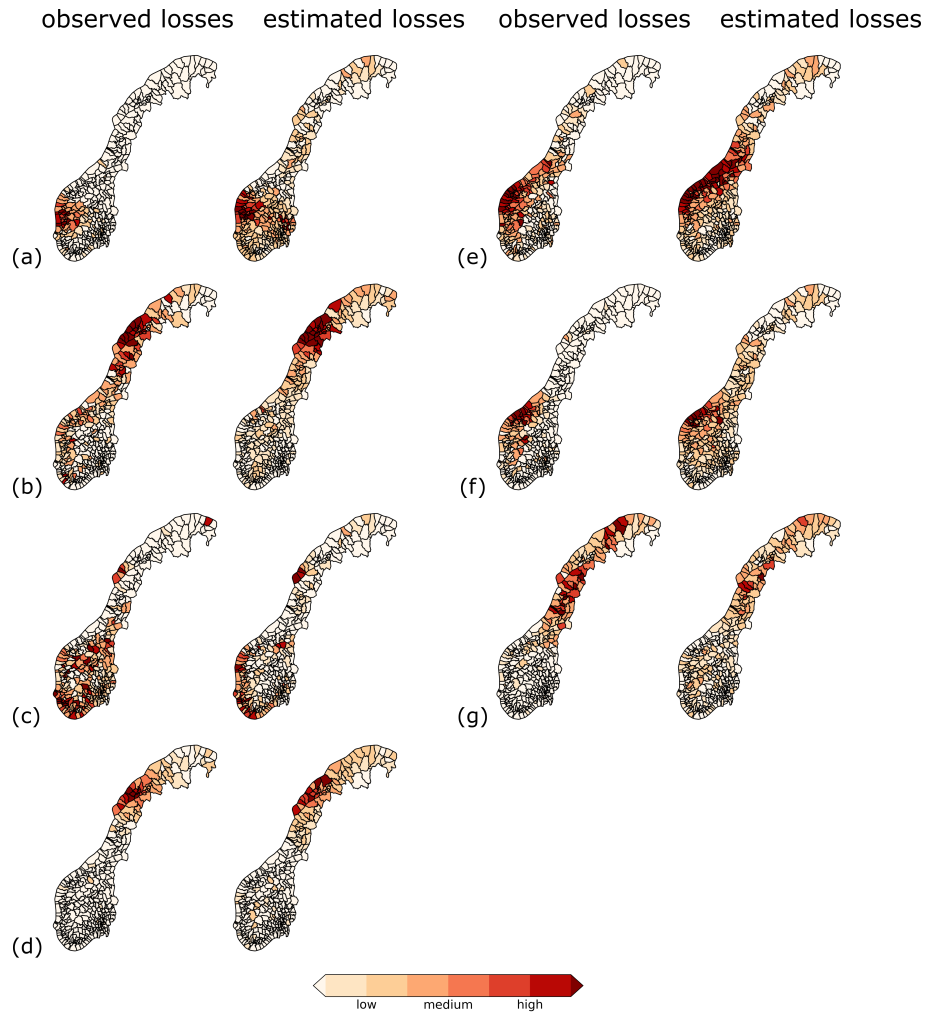
Figure S2. Spatial patterns of observed and estimated losses from the closest model to the observed loss for seven damaging events, where the panels represent, (a) storm of 1994, (b) storm Ole, (c) storm of 1987, (d) storm Frode, (e) storm Tor, (f) storm of 1988 and (g) storm Narve. The Spearman rank correlation between observed and estimated losses of events are 0.46, 0.45, 0.44, 0.56, 0.51, 0.43 and 0.50 respectively. The class boundaries of the colour bar are the 20th, 40th, 60th, 80th, 85th, 90th and 95th percentiles of the observed losses of their respective events.
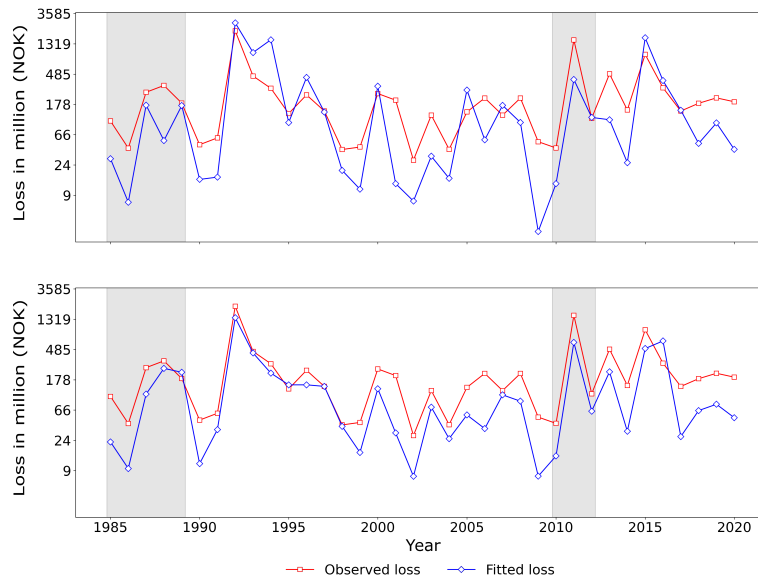
Figure S3. Annual time series of observed and estimated national losses of the deterministic models using the extreme loss class from the exponential model (top) and model by Klawa (bottom). Note that the y-axis is logarithmic and the shaded region represents testing period.
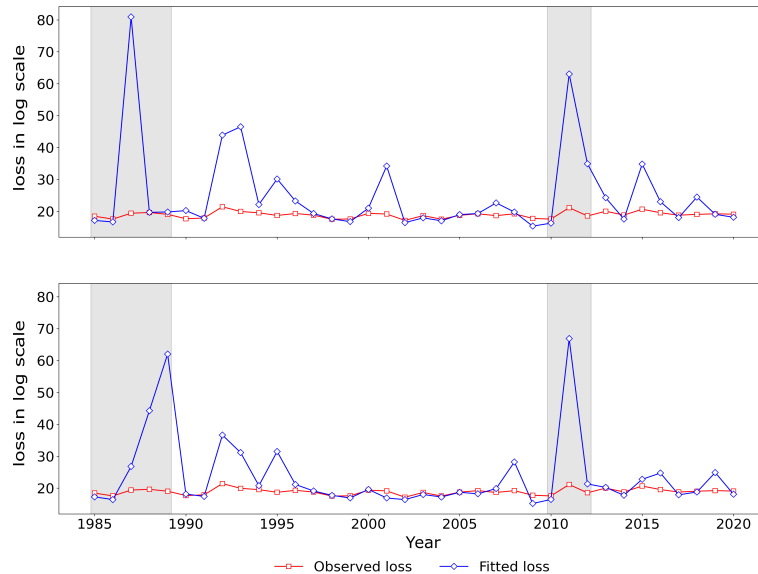
Figure S4. Annual time series of observed and estimated national losses of the probabilistic model using the extreme loss class from the modified Prahl model (top) and model by Prahl (bottom). Note that the y-axis is logarithmic and the shaded region represents testing period. Loss estimates from roughly 20% of the municipalities are responsible for the large margin between observed and estimated losses.