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PUBLICATIONS  
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PUBLICATIONS

**Publications - refereed journals**

- Hrafnkelsson, B., Siegert, S., Huser, R., Bakka, H. and Jóhannesson, Á.V. (2021) Max-and-Smooth: A two-step approach for approximate Bayesian inference in latent Gaussian models. *Bayesian Analysis*, **16**(2), 611-638.
- Gopalan, G., Hrafnkelsson, B., Adalgeirsdottir, G. and Palsson, F. (2021) Bayesian Inference of Ice Softness and Basal Sliding Parameters at Langjokull. *Frontiers in Earth Science*, **9**, No. 610069.
- Johannesson, A.V., Siegert, S., Huser, R., Bakka, H. and Hrafnkelsson, B. (2021) Approximate Bayesian inference for analysis of spatio-temporal flood frequency data. To appear in *Annals of Applied Statistics*.
- Sonnemann, T., Halldorsson, B., Hrafnkelsson, B. and Jonsson, S. (2021) Bayesian inference of a physical seismological model for earthquake strong-motion in south Iceland. *Soil Dynamics and Earthquake Engineering*, **138**, No. 106219.
- Eythorsson, E., Asgeirsdottir, T. L., Erlendsdottir, H., Hrafnkelsson, B., Kristinsson, K.G. and Haraldsson, A. (2021) The impact and cost-effectiveness of introducing the 10-valent pneumococcal conjugate vaccine into the paediatric immunisation programme in Iceland-A population-based time series analysis *PLOS ONE*, **16**(4), No. e0249497.
- Geirsson, O.P., Hrafnkelsson, B., Simpson, D. and Sigurdarson, H. (2020) LGM split sampler: An efficient MCMC sampling scheme for latent Gaussian models. *Statistical Science*, **35**(2), 218-233.
- Kowsari, M., Sonnemann, T., Halldorsson, B., Hrafnkelsson, B. Snaebjornsson, J.P. and Jónsson, S. (2020) Bayesian inference of empirical ground motion models to pseudo-spectral accelerations of south Iceland seismic zone earthquakes based on informative priors. *Soil Dynamics and Earthquake Engineering* **132**, No. 106075.

- Sigurdsson, S. Eythorsson, E., Erlendsdottir, H., Hrafnkelsson, B., Kristinsson, K.G. and Haraldsson, A. (2020) Impact of the 10-valent pneumococcal conjugate vaccine on hospital admissions in children under three years of age in Iceland. *Vaccine*, **38**(12), 2707-2714.
- Gopalan, G., Hrafnkelsson, B., Wikle, C. K., Rue, H., Adalgeirsdottir, G., Jarosch, A. H. and Palsson, F. (2019) A hierarchical spatio-temporal statistical model motivated by glaciology. *Journal of Agricultural, Biological and Environmental Statistics*, **24**(4), 669-692.  
Note: Giri Gopalan received the Laplace Award from the American Statistical Association, Section on Bayesian Statistical Science (ASA SBSS) for this paper.
- Kowsari, M., Halldorsson, B., Hrafnkelsson, B., Snaebjornsson, J. and Jónsson, S. (2019) Calibration of ground motion models to Icelandic peak ground acceleration data using Bayesian Markov chain Monte Carlo simulation. *Bulletin of Earthquake Engineering*, **17**(6), 2841-2870.
- Rahpeyma, S., Halldorsson, B., Hrafnkelsson, B., Green, R. A. and Jónsson, S. (2019). Site effect estimation on two Icelandic strong-motion arrays using a Bayesian hierarchical model of spatial distribution of earthquake peak ground acceleration. *Soil Dynamics and Earthquake Engineering*, **120**, 369-385.
- Kowsari, M., Halldorsson, B., Hrafnkelsson, B. and Jónsson, S. (2019) Selection of earthquake ground motion models using the deviance information criterion. *Soil Dynamics and Earthquake Engineering*, **117**, 288-299.
- Palsson, M., Einarsson, P. and Hrafnkelsson, B. (2019) Variation in b-value of caldera earthquakes during recent activity of the Bardarbunga Volcano in Iceland. *Jökull*, **69**, 71-82.
- Scott, S.W., Covell, C., Júlíusson, E., Valfells, Á., Newson, J., Hrafnkelsson, B., PÁalsson, H. and Guðrúnjónsdóttir, M. (2019) A probabilistic geologic model of the Krafla geothermal system constrained by gravimetric data *Geothermal Energy* **7**(1), 1-30.
- Quirk, S. J., Haraldsson, G., Hjalmarsdottir, M. A., van Tonder, A. J., Hrafnkelsson, B., Bentley, S. D., Haraldsson, A., Erlendsdottir, H., Brueggemann, A. B. and Kristinsson, K. G. (2019) Vaccination of Icelandic children with the 10-valent pneumococcal vaccine leads to a significant herd effect among adults in Iceland. *Journal of Clinical Microbiology*, **57**(4), , No. UNSP e01766-18.
- Frater, P.N., Hrafnkelsson, B., Elvarsson, B.T. and Stefansson, G. (2019) Drivers of growth for Atlantic cod (*Gadus morhua* L.) in Icelandic waters - a Bayesian approach to determine spatiotemporal variation and its causes. *Journal of Fish Biology* **95**(2), 401-410.

- Sveinsdóttir, H., Björnsdóttir, J.B., Erlendsdóttir, H., Hjálmsdóttir, M.Á., Hrafnkelsson, B., Haraldsson, Á., Kristinsson, K.G. and Haraldsson, G. (2019) The effect of the 10-Valent pneumococcal nontypeable Haemophilus influenzae Protein D conjugate vaccine on H. influenzae in healthy carriers and middle ear infections in Iceland. *Journal of Clinical Microbiology* **57**(7), No. UNSP e00116-19.
- Eythorsson, E., Sigurdsson, S., Erlendsdóttir, H., Hrafnkelsson, B., Kristinsson, K.G. and Haraldsson, A. (2019) Increase in tympanostomy tube placements despite pneumococcal vaccination, a population-based study. *Acta Paediatrica* **108**(8), 1527-1534.
- Gopalan, G., Hrafnkelsson, B., Adalgeirsdóttir, G., Jarosch, A. H. and Palsson, F. (2018) A Bayesian hierarchical model for glacial dynamics based on the shallow ice approximation and its evaluation using analytical solutions. *Cryosphere*, **12**(7), 2229-2248.
- Rahpeyma, S., Halldorsson, B., Hrafnkelsson, B. and Jónsson, S. (2018) Bayesian hierarchical model for variations in earthquake peak ground acceleration within small-aperture arrays. *Environmetrics*, **29**(3), No. e2497.  
Note: This paper was selected to appear in the virtual issue Bayesian Environmetrics.
- Eythorsson, D., Gardarson, S.M., Gunnarsson, A. and Hrafnkelsson, B. (2018) Statistical summer mass-balance forecast model with application to Bruarjokull glacier, southeast Iceland. *Journal of Glaciology*, **64**(244), 311-320.
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- Olafsdottir, T., Hrafnkelsson, B., Thorgeirsson, G. and Asgeirsdottir, T.L. (2016) The tax-free year in Iceland: A natural experiment to explore the impact of a short-term increase in labor supply on the risk of heart attacks. *Journal of Health Economics*, **49**, 14-27.
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**Publications - submitted to arXiv**

- Hrafnkelsson, B., Sigurdarson, H., Rögnvaldsson, S., Jansson, A.Ö., Vias, R.D. and Gardarsson, S.M. (2021) Generalization of the power-law rating curve using hydrodynamic theory and Bayesian hierarchical modeling. *arXiv preprint* arXiv:2010.04769v2

#### **Publications - refereed Icelandic journals**

- Birgir Hrafnkelsson og Gunnar Stefánsson. (2003) Mat á lengdardreifingum. *Tímarit um raunvísindi og stærðfræði*, 1. árg. 2. hefti, 45-55.
- Snorri Árnason, Birgir Hrafnkelsson og Ólafur P. Pálsson (2005) Mat á rennsli um og rennsli með bayesískri tölfræði. *Árbók VFÍ 2005*, 209-217.

#### **Publications - book chapters**

- Margeirsson, S., Jonsson, G., R., Arason, S., Thorkelsson, G., Sigurgisladottir, S., Hrafnkelsson, B. and Jensson, P. (2007) Food Engineering Trends - Icelandic View. In the book: *Food Engineering Research Developments*. Edited by Terrance P. Klening. Hauppauge NY, Nova Science Publishers Inc. pp. 1-24.

#### **Publications - refereed conference papers**

- Rahpeyma, S., Halldorsson, B., and Hrafnkelsson, B. (2020). Velocity Profile Estimation in the Presence of Multiple Strong Velocity Reversals. *17th World Conference on Earthquake Engineering (17WCEE)* (p. Paper No. 3950). 13-18 September 2020, Sendai, Japan.
- Rahpeyma, S., Halldórsson, B., Hrafnkelsson, B. and Jónsson, S. (2019) Site effect estimation on two Icelandic strong-motion arrays using a Bayesian multi-level model for the spatial distribution of earthquake ground motion amplitudes. *NORTHQUAKE 2019 - The 3rd International Workshop on Earthquakes in North Iceland* (Þekkingarnet Þingeyinga), Húsavík, North Iceland, 21-24 May 2019 .
- Sonnemann, T., Halldorsson, B., Hrafnkelsson, B., Jónsson, S. and Snæbjörnsson, J.Þ. (2019) Earthquake source modeling and ground motion simulation in north Iceland. *NORTHQUAKE 2019 - The 3rd International Workshop on Earthquakes in North Iceland* (Þekkingarnet Þingeyinga), Húsavík, North Iceland, 21-24 May 2019.
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- Ingimarsson, K. M., Hrafnkelsson, B., Gardarsson, S. M. and Snorrason, A. (2008) Bayesian estimation of discharge rating curves. *XXV Nordic Hydrological Conference*, pp. 308-317. Nordic Association for Hydrology. Reykjavik, August 11-13, 2008.

#### **Publications - unrefereed conference papers**

- Rahpeyma, S., Halldorsson, B. and Hrafnkelsson, B. (2017). Bayesian hierarchical model of peak ground acceleration for the Icelandic strong-motion arrays. International Conference on Earthquake Engineering and Structural Dynamics (the Earthquake Engineering Research Centre of the University of Iceland), 12-16 June 2017, Reykjavik, Iceland.
- Cressie, N., Wendt, D. A., Johannesson, G., Mugglin, A. S. and Hrafnkelsson, B. (2003) A spatio-temporal statistical approach to problems in command and control. *Proceedings of the Sixth Annual U.S. Army Conference on Applied Statistics*, Houston 18-20 October 2000. Editors Bodt, B. and Wegman, E. Army Research Laboratory, MD, pp. 170-190.