

Monitoring volcanic plume height and fountain height using webcams at the 2021 Fagradalsfjall eruption in Iceland



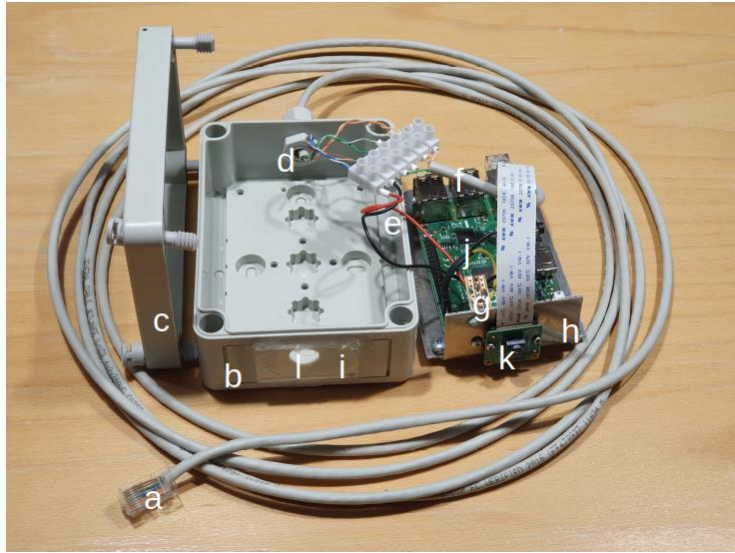
Talfan Barnie¹, Manuel Titos¹, Tryggvi Hjörvar¹, Bergur Bergsson¹, Sighvatur Pálsson¹, Björn Oddson², Sara Barsotti¹, Melissa Pfeffer¹, Sibylle von Löwis of Menar¹, Eysteinn Sigurðsson¹, Þórður Arason¹

¹ Icelandic Meteorological Office

² Department of Civil Protection and Emergency Management

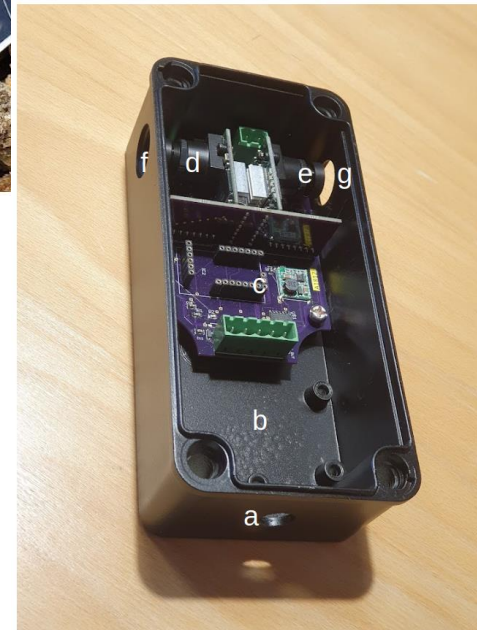


1. Two webcamera types designed and built in house:

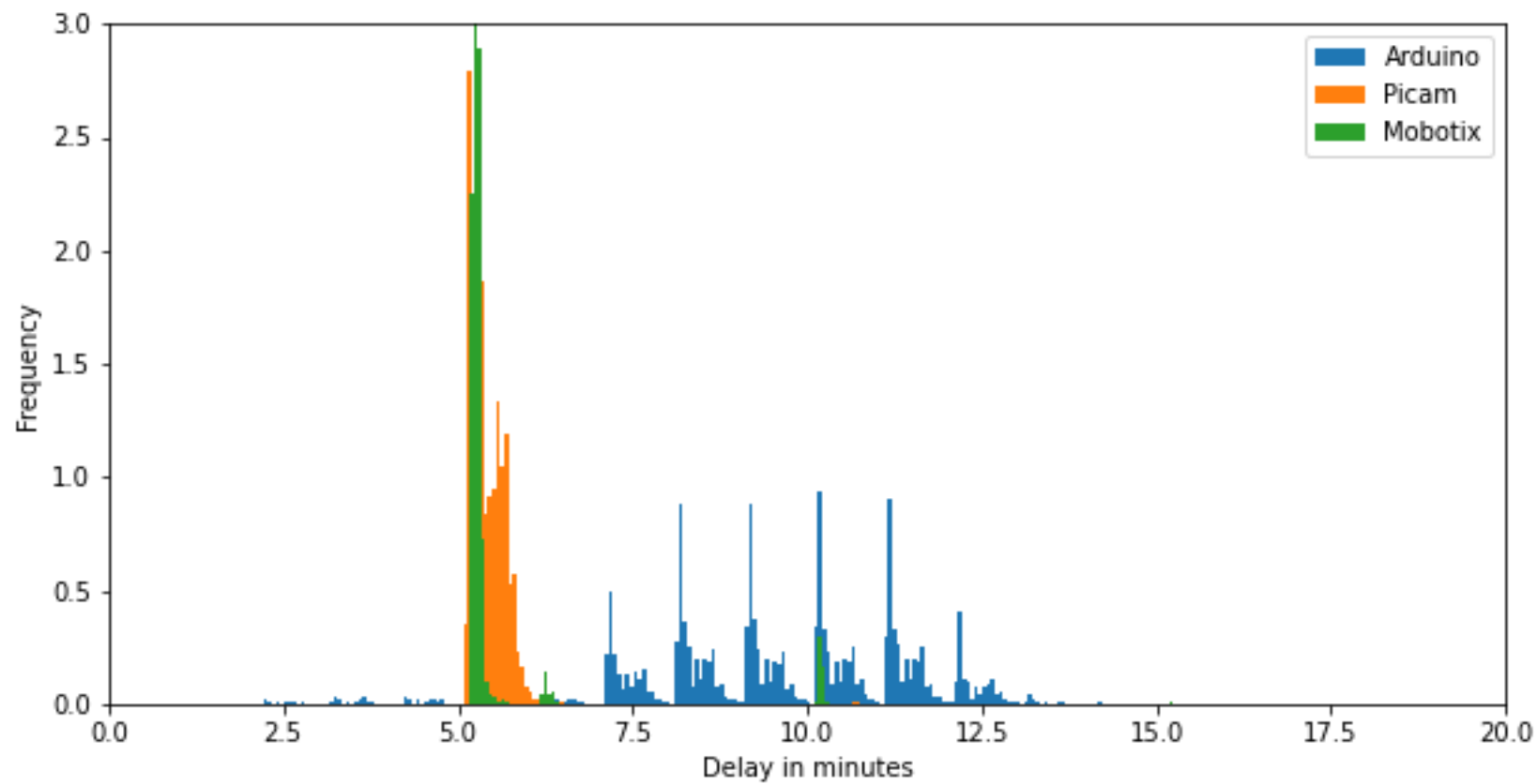


RaspberryPi Picam based system

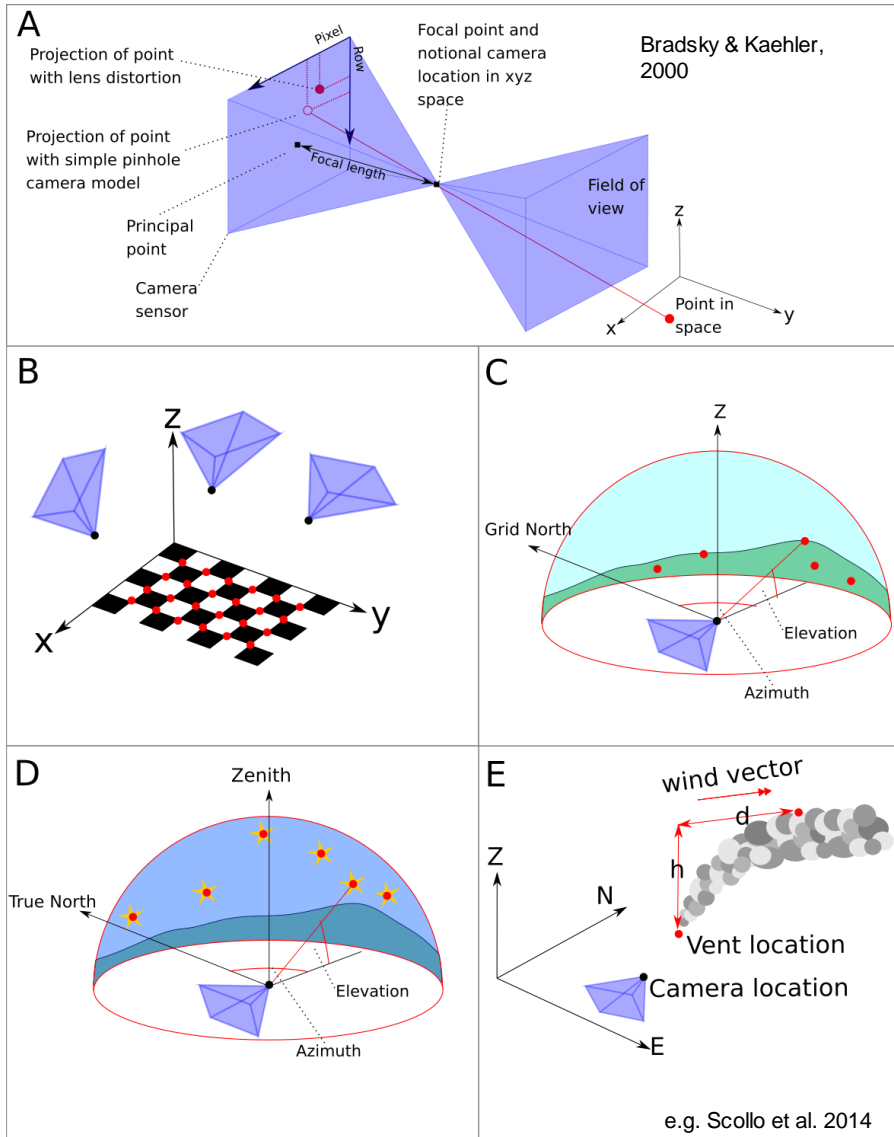
Arduino based system



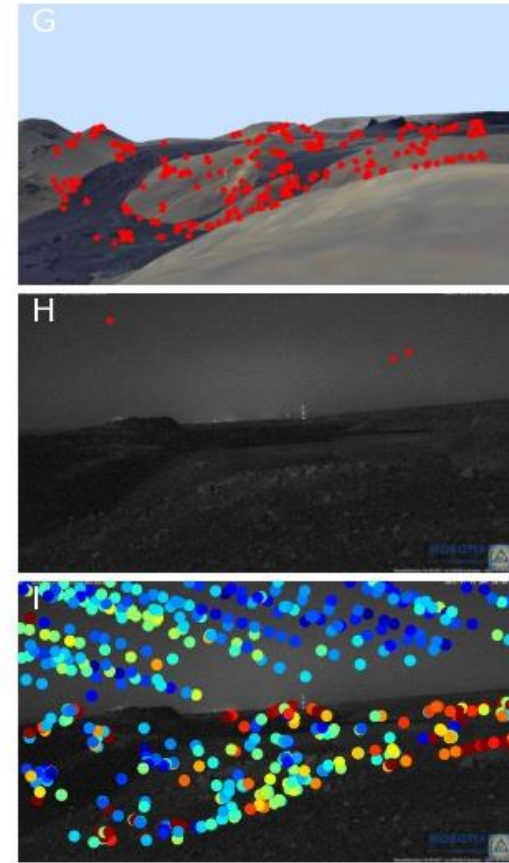
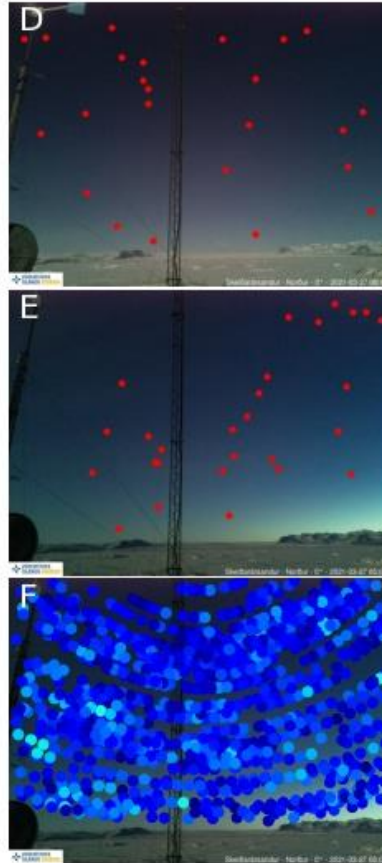
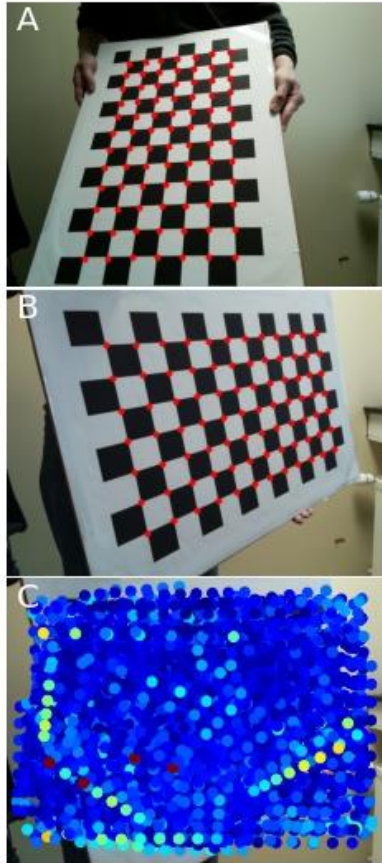
2. Timeliness



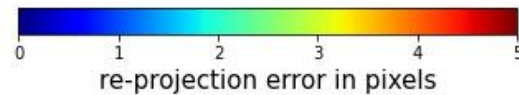
3. Geometry



3. Calibration examples

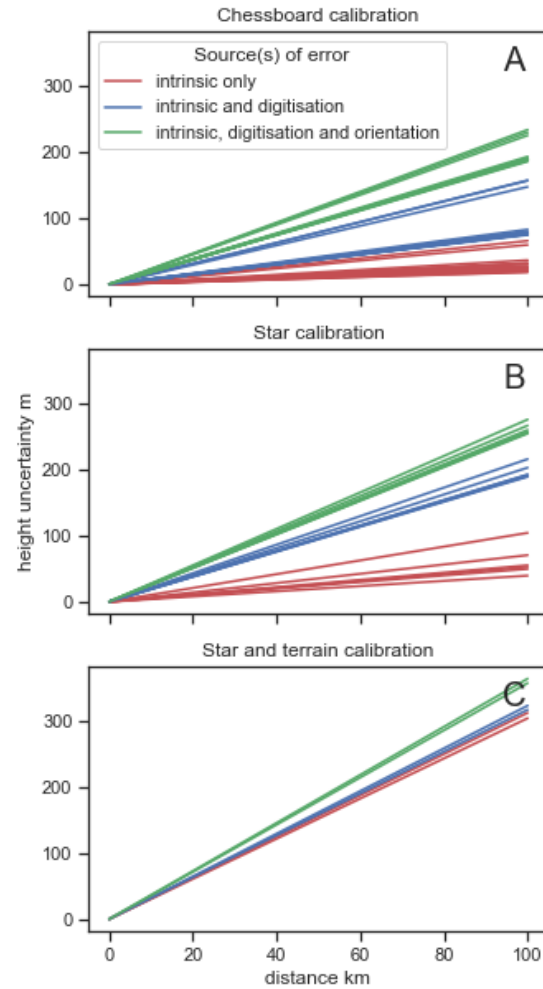


based on data from the Icelandic Institute of Natural History, Institute of Earth Sciences and National Land Survey of Iceland



Will be made available as an open source python package

4. Uncertainty




Vefmyndavél: REYKJANES Lidarkerra a

Dagsetning og tími: 2021-08-06 23:00

Veðurlíkan: /harmonie/harmonie_2021080618.05

Gömsudvái:



Leaflet | Icelandic Met Office | National Land Survey of Iceland | © OpenStreetMap contributors

Plume parameters:

63.88903945 Lat -22.2707769 Lon

Hæð gossmakkar / m y.s. 2806

Wind bearing (clockwise from grid north) 169.59245827237825

Speed 6.726710739868801

Vindátt 0

Fjarlægð undan vindi / m 143

Camera parameters: c

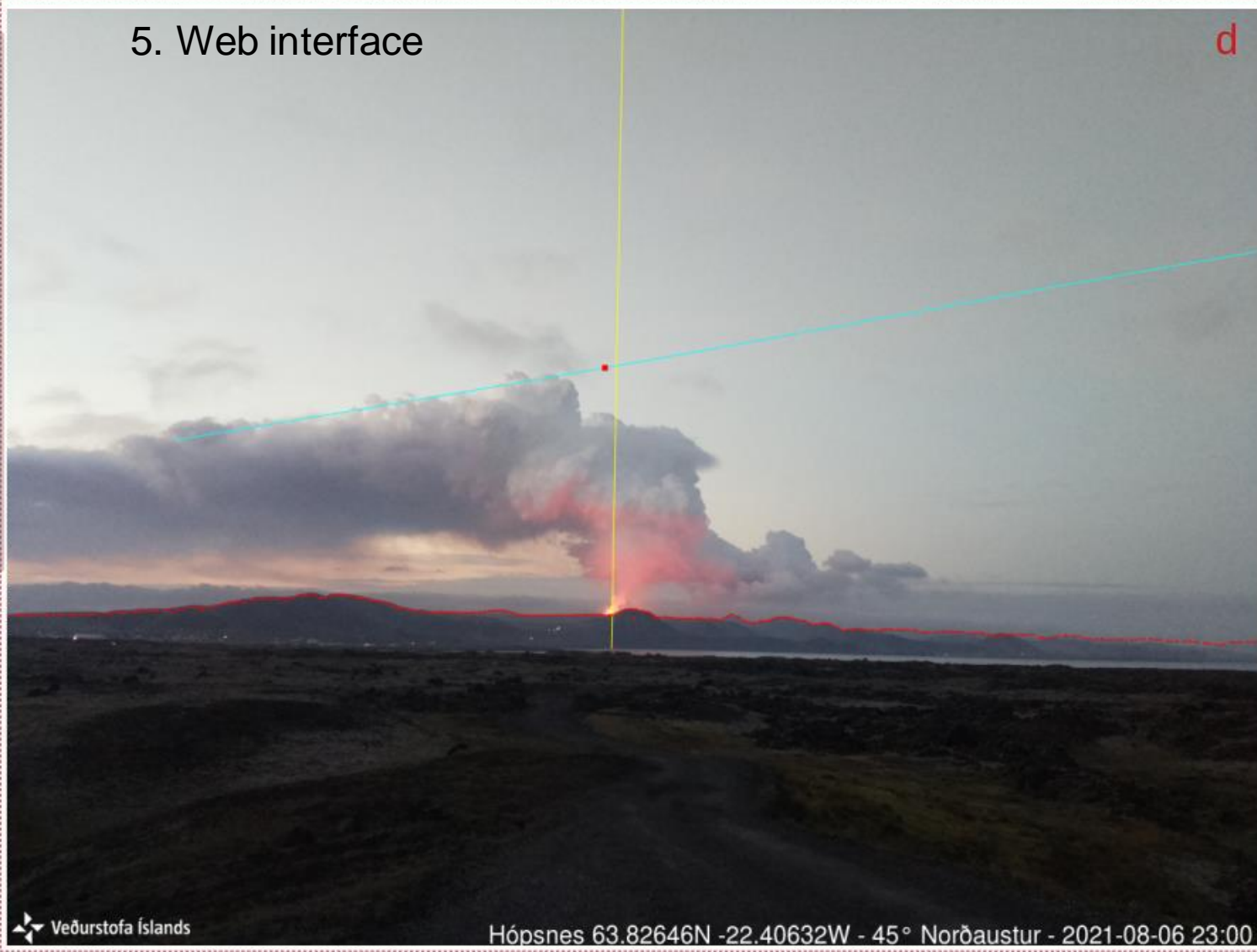
Focal Length (Only change for zooming video streams) 1023.0841523185625

Yaw 45.46986046853226

Pitch 9.74028251722399

Roll -0.916732472209318

5. Web interface



6. Web interface

Vindátt

Fjarlægð undan vindi / m

Camera parameters:

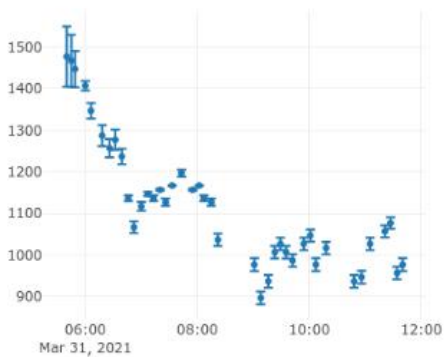
Focal Length (Only change for zooming video streams)

Yaw

Pitch

Roll

save plume height
delete plume height



DELETE THIS TIMESERIES
DELETE ALL TIMESERIES
EXPORT TO CSV

7. Plume and fire fountain heights

