SnT 2025 8 SEPTEMBER ONLINE DAY 9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE
CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

P3.1-738

The Algerian Network for Infrasound (ANIs)

K. Daiffallah, Z. Bouyahiaoui, F. Semmane, S. Nait Amor, R. Ikhlef, and L. Yelles Chaouche

Centre de Recherche en Astronomie, Astrophysique et Géophysique CRAAG, Algiers, Algeria

INTRODUCTION AND MAIN RESULTS

This poster presents the Algerian Network for Infrasound (ANIs), a pioneering project aimed at establishing a comprehensive network of low-cost infrasound devices across Algeria.

Installed since 2022, two operational devices have revealed a variety of natural and anthropogenic infrasound sources. Detected events include lightning strikes, strong earthquakes, quarry explosions, cyclones, volcanic activity, and two super bolides (fireballs) which were also detected by the International Monitoring System (IMS) network.

SnT 2025 CTBT: SCIENCE AND TECHNOLOGY CONFERENCE
8 SEPTEMBER ONLINE DAY
9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE

The Algerian Network for Infrasound (ANIs)

K. Daiffallah, Z. Bouyahiaoui, F. Semmane, S. Nait Amor, R. Ikhlef, and L. Yelles Chaouche

P3.1-738

Introduction

In this poster, we present the Algerian Network for Infrasound (ANIs), a pioneering project aimed at establishing a comprehensive network of low-cost infrasound devices across Algeria. In its initial phase, the project involves the deployment of four infrasound sensors in the northern part of the country by the end of 2025 (**Fig. 1**).

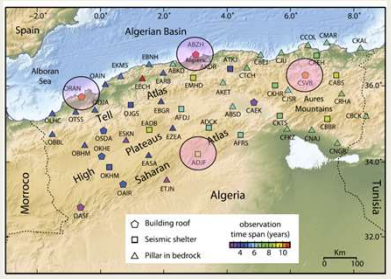

Fig. 1- The **A**lgerian **N**etwork for **I**nfra**s**ound **ANIs** (the nothern part).

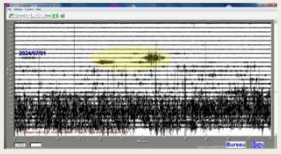

Fig. 2- The signature of Hurricane Beryl recorded at Algiers station on 01 Jully 2024.

Fig. 3- The Mauna Loa volcano signal recorded on 30 November 2022 at Algiers station.

Fig. 4- Lightning strikes signature recorded at Constantine station on 07 Mai 2025.

Fig. 5- The Mihoub local earthquake of magnitude of 5.1 recorded on 18 March 2025 at Boumerdes station.

First recording of the ANIs network and conclusion

A preliminary data from two operational devices since June 2022 have revealed a variety of natural and anthropogenic infrasound sources. Below are some examples of detected events:

Cyclones: the Hurricane Beryl formed in the Atlantic. It reached category 5 on 1 July 2024, with winds of up to 260 km/h. It was 7000 km from the infrasound station of Algiers! **(Fig. 2).**

Volcanic activity: the powerful eruption of the Mauna Loa volcano in the Hawaiian Islands on 30 November 2022. It was more than 13000 km from the infrasound station of Algiers! **(Fig. 3).**

Lightning strikes: a powerful storm and lightning at Constantine station on 7 May 2025 **(Fig. 4).**

Local earthquakes: a local earthquake of magnitude of 5.1 occurred in the region of Mihoub on 18 March 2025, and recorded at the station of Boumerdes located at 46 km from the epicenter **(Fig. 5).**

Quarry explosion: a quarry explosion occurred at 1.3 km from the Algiers station on the 20 September 2022 **(Fig. 6).**

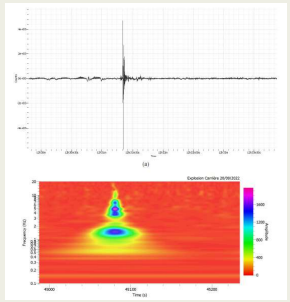

Fig. 6- Quarry explosion recorded on 02 September 2022 at Algiers station. The top panel shows the infrasound signal. The bottom panel shows the wavelet spectrogram of the signal.

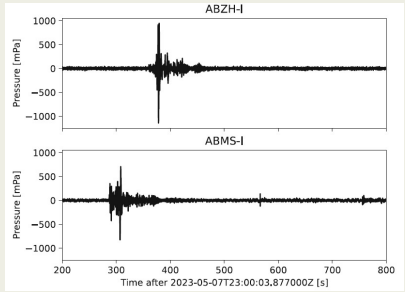

Fig. 7- El-Hakimia fireball recorded from Algiers station (top panel) and from Boumerdes station (bottom panel) on 07 Mai 2023.

Fireballs: two significant fireballs were detected and analyzed using data from local seismic and infrasound networks, as well as from the International Monitoring System (IMS) network. The latest fireball event, observed in Algeria and Spain on May 07, 2023 at 22h59 UTC **(Fig. 7)** published recently in Bouyahiaoui et al. 2025 (*Pure Appl. Geophys.* 182, 1913). The second fireball event occurred in the Dellys region on November 24, 2022 at 23h22 UTC and is further detailed in the **E-poster 3.5-757** presented at SNT 2025 by Bouyahiaoui et al. **(Fig. 8**).

In conclusion, these recordings underscore the potential of ANIs in enhancing the detection and study of infrasound phenomena across diverse contexts. The next step is to install about twelve sensors in the southern part of Algeria. This will help to cover a large area of the Algerian desert.

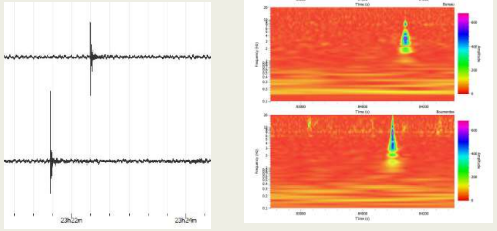

Fig. 8- Dellys fireball recorded at Algiers station (top panel) and at Boumerdes station (bottom panel) on 24 November 2022. The left figure shows the infrasound signals. The right figure shows the wavelet spectrogram of the signals.

CRAAG