

2023.

Tko si tu moralnu dužnost preuzme,
da nešto bilježi, neka to ili u redu
bilježi ili uopće neka ne bilježi.
Bolje je ništa nego loše.

(Andrija Mohorovičić, 1857. - 1936.)



DRŽAVNI HIDROMETEOROLOŠKI ZAVOD
CROATIAN METEOROLOGICAL AND HYDROLOGICAL SERVICE

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2023

Dragi naši korisnici, partneri i kolege,

rezultati postignuti u 2022. obvezuju nas na daljnji predani rad u godini koja je pred nama.

Veliko mi je zadovoljstvo što su prvi učinci naših EU strukturnih projekata modernizacije sve tri motriteljske mreže: meteorološke, hidrološke i mreže za praćenje kvalitete zraka postali vidljivi u 75., jubilarnoj godini.

Projekti METMONIC, VEPAR i AIRQ donose unaprjeđenje naših proizvoda i usluga, uvode nove tehnologije i metode rada te učinkovitog izvršenja naših najvažnijih zadaća: zaštiti života i sigurnosti građana, podršci gospodarskom razvoju te prilagodbi Hrvatske klimatskim promjenama čijoj smo snazi i intenzitetu, nažalost, prošle godine prečesto svjedočili. Modernizacija koju dovršavamo ključ je bolje otpornosti našeg društva na klimatske promjene.

Projektom METMONIC, uspostavili smo tri suvremena meteorološka radara i po prvi put u povijesti hrvatski dio Jadrana je pokriven radarskim mjerenjima te je izgrađena mreža meteorološko-oceanografskih plutača.

Projektom AIRQ, u partnerstvu s Institutom za medicinska istraživanja, nabavili smo superračunalo i povećali računalnu snagu DHMZ-a. Modernizirali smo 21 postaju Državne mreže za trajno praćenje kvalitete zraka i osuvremenili laboratorije kako bismo uspostavili cjeloviti sustav mjerenja i kontrole kvalitete zraka s ciljem zaštite zdravlja građana i okoliša.

Projektom VEPAR, u partnerstvu s Hrvatskim vodama, uspostavljamo prognostičke modele za sve slivove naših rijeka što je važan iskorak u efikasnijem vodnom gospodarstvu i ublažavanju rizika od poplava.

Projekti su primjer kako napredna tehnologija pomaže u rješavanju okolišnih izazova te jača kapacitete Hrvatske u zaštiti okoliša, sigurnosti građana i održivom razvoju.

Modernizaciju je omogućio predani rad zaposlenika DHMZ-a, koji će svojim entuzijazmom i trudom osigurati i njezin uspješan završetak u 2023. godini i na tome im iskreno zahvaljujem.

Naše operativne i razvojne aktivnosti kao i modernizacija ne bi bile moguće bez ulaganja u obrazovanje naših zaposlenika. Savjetovanje voditelja glavnih meteoroloških postaja primjer je uspješne razmjene znanja i iskustva, jer je posao motrenja u samom temelju naših aktivnosti.

Članstvo i sudjelovanje u radu međunarodnih stručnih organizacija i asocijacija (WMO, ECMWF, EUMETSAT, EUMETNET, ACCORD, RC LACE..) omogućava obavljanje naše zadaće u skladu s najnovijim tehnološkim i znanstvenim postignućima.

Kako bismo ispunili potrebe naših korisnika za pravodobnom, točnom i prilagođenom informacijom o prošloj, sadašnjoj i budućoj klimi u planu je projekt jačanja sustava praćenja klimatskih promjena i posljedica. Planiramo razvijanje meteoroloških i klimatoloških podloga prilagođenih potrebama ranjivih sektora, a glavni preduvjet je izgradnja nove funkcionalne zgrade DHMZ-a u kojoj bismo sjedinili sve službe i djelatnosti.

U radu se uvijek vraćamo našem najznačajnijem geofizičaru, Andriji Mohorovičiću koji je upravljajući opservatorijem na Griču 3 u Zagrebu, iz kojeg je potekao DHMZ, proveo prvu modernizaciju mreže meteoroloških postaja u Hrvatskoj.

U 2022. ispred naše rodne kuće dobio je spomenik i spomen-ploču čime je odano priznanje njegovom radu i epohalnom otkriću. Međutim, najveće priznanje koje mu mi možemo dati je da se u svom radu vodimo njegovim naputkom:

*Tko si tu moralnu dužnost preuzme, da nešto bilježi, neka to ili u redu bilježi ili uopće neka ne bilježi.
Bolje je ništa nego loše.*

dr. sc. Branka Ivančan-Picek
glavna ravnateljica DHMZ-a



Dear clients, partners, and colleagues,

The results we achieved in the year 2022 oblige us to continue with our committed work in the following year as well.

It is my great pleasure to point out that the first effects of our EU' structural projects of modernization of each of the three monitoring networks: meteorological, hydrological and the network of air quality monitoring have become visible in the 75th year, the year of a jubilee.

METMONIC, VEPAR and AIRQ projects bring improvement of our products and services, implement new technologies and working methods and enable us to effectively do our tasks: protect the lives and safety of our citizens, support economic growth, and adapt Croatia to climate changes whose power and intensity we unfortunately witnessed too often last year. Modernization which we are ending is a key to better resilience of our society to climate changes.

METMONIC project established three modern meteorological radars and the Croatian part of the Adriatic has been covered by radar measurements for the first time in history. Also, a network of meteorological-oceanographic buoys was built.

The AIRQ project in partnership with Institute for Medical Research and Occupational Health implemented the supercomputer which improved the computing power of DHMZ. We modernized 21 stations of national network for continuous air quality monitoring and modernized chemical laboratories to establish a complete system of measurement and air quality control whose aim is to protect the health of citizens and the environment.

The VEPAR project, in partnership with Hrvatske vode establishes forecasting models for all our river basins which is an important step forward to a more efficient water economy and flood risk reduction.

The projects are an example how modern technology helps solving the environmental challenges and strengthens the capacities of Croatia in protecting the environment, the safety of citizens and sustainable development.

This modernization has been ensured by the dedicated work of DHMZ employees whose enthusiasm and effort will bring an end to the projects in progress in 2023 and therefore I honestly thank them.

Our operational and developmental activities as well as modernization would not be possible without investing in our employees' education. Workshops for the heads of our main meteorological stations is an example of a successful exchange of knowledge and experience because monitoring is the core of our activities.

Moreover, membership and participation in the work of international professional organizations and associations (WMO, ECMWF, EUMETSAT, EUMETNET, ACCORD, RC LACE etc.) enables us to do our tasks in accordance with the newest technological and scientific achievements.

To fulfill the needs of our clients to get timely, correct, and adapted information about the past, present, and future climate we plan to strengthen the climate monitoring system and its consequences. We also plan to develop meteorological and climatological basis adapted to the needs of vulnerable sectors. However, the main condition is to build the new functional premises of DHMZ in which all the services and activities would be united.

In our work we always return to Andrija Mohorovičić, our most significant geophysicist who, governing the observatory at Grič 3, established the first modernization of meteorological stations network in Croatia.

In 2022, Andrija Mohorovičić's monument and memorial plaque was commissioned to honor his work and epoch-making discovery in front of the birthplace of DHMZ. Yet, the greatest honor we can grant him is to be guided by his words in our work:

He who undertakes the moral duty to write something down, may he write it properly or may he not write it down at all.

It is better to do nothing than do it badly.

*Branka Ivančan-Picek, PhD
Director-General, DHMZ*





Zaleden trenutak / Frozen moment, Senj, ©Šimun Pavić

2023. SIJEČANJ

JANUARY

METMONIC: Prvi DHMZ-ov mikrovalni radiometar, Monte Kope

METMONIC: First DHMZ's microwave radiometer, Monte Kope



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Shelf oblak nad gradom / Shelf cloud over town, Pag, ©Danijel Palčić

2023. **VELJAČA** FEBRUARY

AIRQ: Superračunalo
AIRQ: Supercomputer



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2023. OŽUJAK

MARCH

METMONIC: MRC Debeljak (poluotok Pelješac)

METMONIC: MRC Debeljak (Pelješac peninsula)



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| | | <small>Svjetski dan voda World Water Day</small> | <small>Svjetski meteorološki dan World Meteorological Day</small> | | | |
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Dolina na dlanu / Valley on the palm of the hand, Željava, ©Ivica Meglić

2023. TRAVANJ

APRIL

VEPAR: Modernizacija 136 hidroloških postaja
DHMZ-a

VEPAR: Modernization of 136 hydrological
stations of DHMZ



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Mir / Stillness, Otok kod Preloga, ©Miroslava Novak Hranjec

2023. SVIBANJ

MAY

AIRQ: Modernizirana postaja Državne mreže za trajno praćenje kvalitete zraka, Hum (otok Vis)

AIRQ: Modernized station of the National Network for Continuous Air Quality Monitoring, Hum (the Island of Vis)



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Posežući za Suncem / Reaching for the sunshine, Baranja, ©Ivan Ranogajec

2023. LIPANJ

JUNE

METMONIC: Lidar, Slavonski Brod

METMONIC: Lidar, Slavonski Brod



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Snaga oblaka / *The power of cloud*, Mali Lošinj, ©Sandro Puncet

2023. SRPANJ

JULY

METMONIC: Sidrenje meteorološko-oceanografske plutače, šibenski arhipelag

METMONIC: Anchoring of the meteorological-oceanographic buoy, Šibenik archipelago



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Zemlja snova / Dreamland, Velebit, ©Aleksandar Gospić

2023. KOLOVOZ

AUGUST

AIRQ: Ionski kromatograf i maseni spektrometar za analizu zraka i oborine

AIRQ: Ion chromatographer and mass spectrometer for air and precipitation analysis



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Mammatus nad Biokovom / *Mammatus over Biokovo*, Makarska, ©Goran Gašparac

2023. RUJAN

SEPTEMBER

VEPAR: Uspostava cjelovitog nacionalnog operativnog sustava za prognoziranje poplava

VEPAR: Establishing the integral national flood forecasting system



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Snaga prirode / Force of nature, Stari Grad na Hvaru, ©Miroslav Zadavec

2023. LISTOPAD

OCTOBER

VEPAR: Optimalna rješenja za integralno i održivo upravljanje vodama

VEPAR: Optimal solutions for integral and sustainable water management



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Druga dimenzija / *Another dimension*, Rakovica, ©Šime Barešić

2023. **STUDENI** NOVEMBER

AIRQ: Instrumenti za umjeravanje protoka

AIRQ: Flow calibration instruments



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Zimska zemlja čuda / Winter wonderland, Samobor, ©Romeo Ibršević

2023. PROSINAC

DECEMBER

VEPAR: Educiranje i informiranje javnosti
o rizicima od poplava

VEPAR: Flood-related risk public education
and communication



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2023

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