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# DOIs implementation at MET

Lara Ferrighi, FOU-FD

25.03.2020

# Overview

- What are persistent identifiers and DOI?
- Why is a DOI important for Data?
- How to get a DOI at MET?
- How is DOI implemented at MET?

# What is a Persistent Identifier?

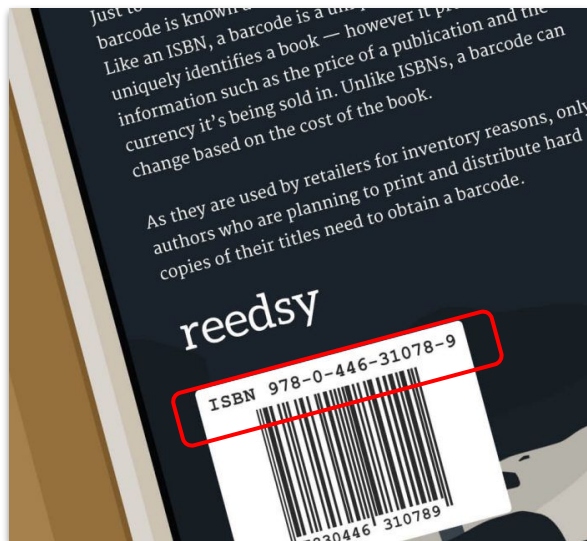
DOI is a unique and persistent identifier.

A **persistent identifier** (PI or PID) is

- a *long-lasting* reference to a document, file, web page, or other object.
- usually refers to digital objects that are accessible over the Internet.
- typically, such an identifier is not only **persistent** but **actionable**: you can plug it into a web browser and be taken to the identified source.

# What is a Persistent Identifier?

- [International Standard Book Number](#) (ISBN)
- [ORCID iDs](#) (for researchers)
- [Digital Object Identifiers](#) (DOIs)
- ....



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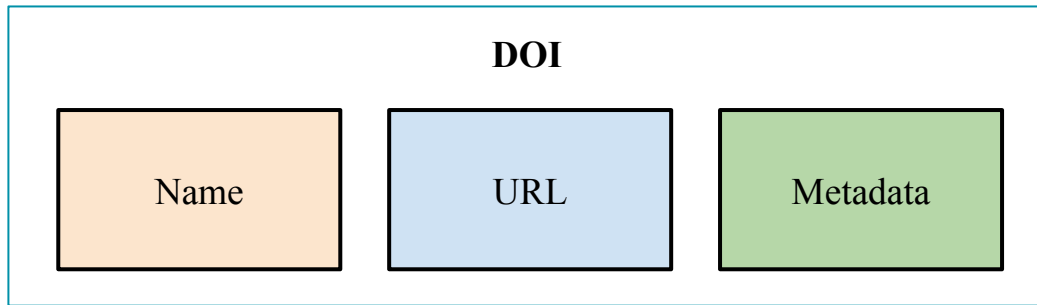


**DataCite**  
FIND, ACCESS, AND REUSE DATA

Our registration agency

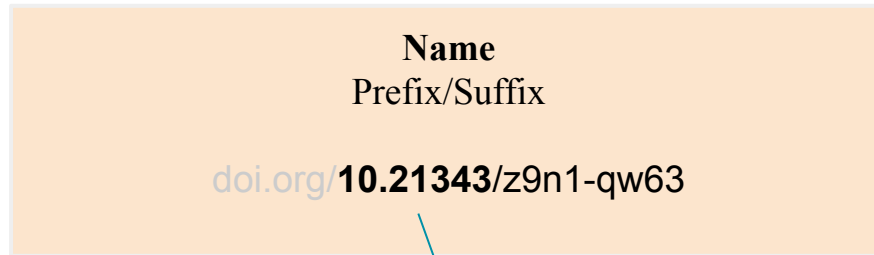
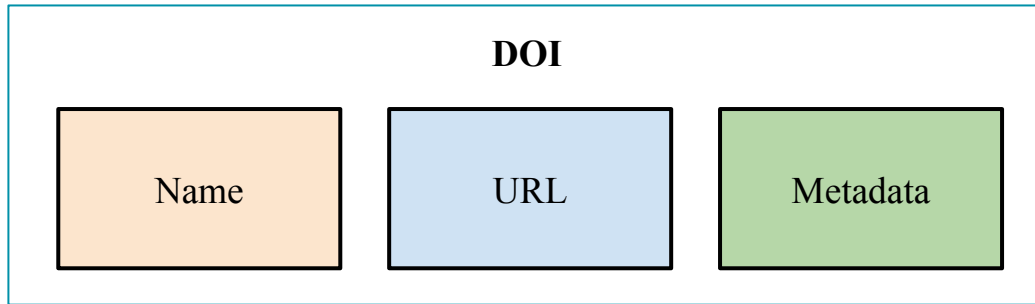
# What is a DOI?

A DOI is a serial code used to **uniquely identify** content of various types of entities. The DOI system is particularly used for electronic documents such as journal articles or datasets.



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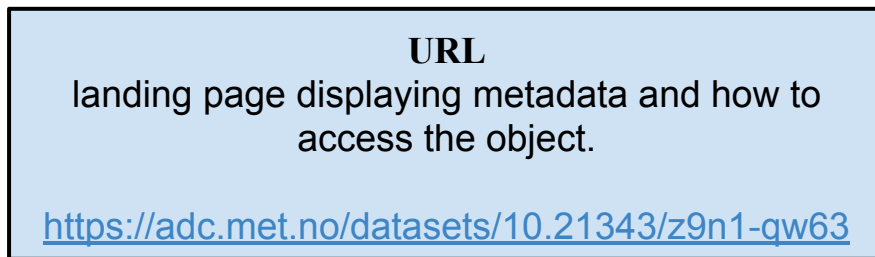
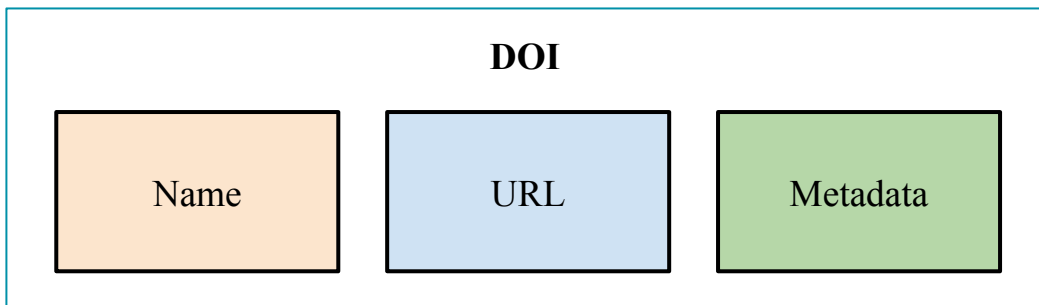


Assigned by Datacite to METNO

**UNIQUENESS**

# What is a DOI?

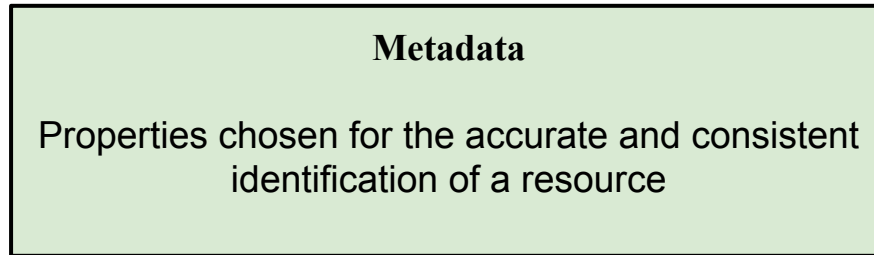
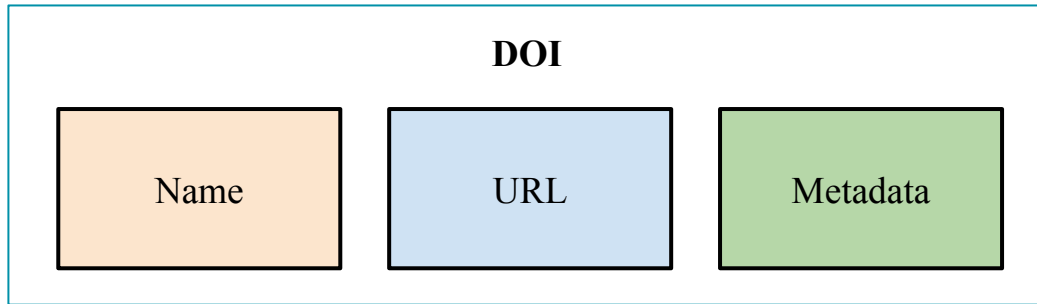
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# What is a DOI?

A DOI is a serial code used to uniquely identify content of various types of entities. The DOI system is particularly used for electronic documents such as journal articles or datasets.




# Metadata required from the DOI provider

<b>Mandatory</b>	<b>Recommended</b>	<b>Optional</b>
Identifier	Subject	Language
Creator	Contributor	Alternate ID
Title	Date	Size
Publisher	Related identifier	Format
Publication year	Description	Version
Resource Type	GeoLocation	Rights

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Audiovisual  
Collection  
DataPaper  
Dataset  
Event  
Image  
InteractiveResource  
Model  
PhysicalObject  
Service  
Software  
Sound  
Text  
Workflow  
Other



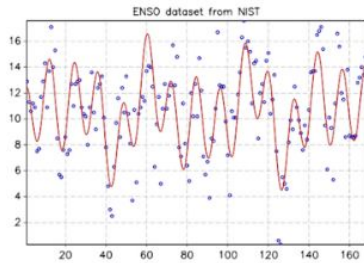
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**This is only a subset of what we internally require!**

# Using a DOI - made simple

1. Take a dataset



2. Describe it

Title

Authors

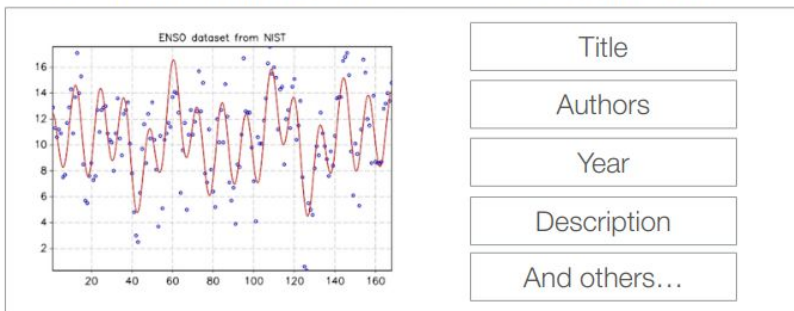
Year

Description

And others...

# Using a DOI - made simple

1. Take a dataset



2. Describe it

Title

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Year

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And others...

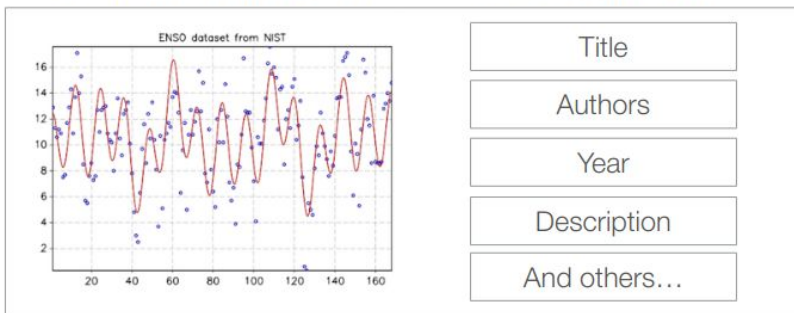
3. Assign a DOI



10.1234/exampledata

# Using a DOI - made simple

1. Take a dataset



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Year

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And others...

3. Assign a DOI



10.1234/exampledata

4. Reuse and reference!

ATLAS Collaboration, "Data from Figure 7 from: Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC:  $H \rightarrow \gamma\gamma$ ,"  
<http://doi.org/10.7484/INSPIREHEP.DATA.A78C.HK44>



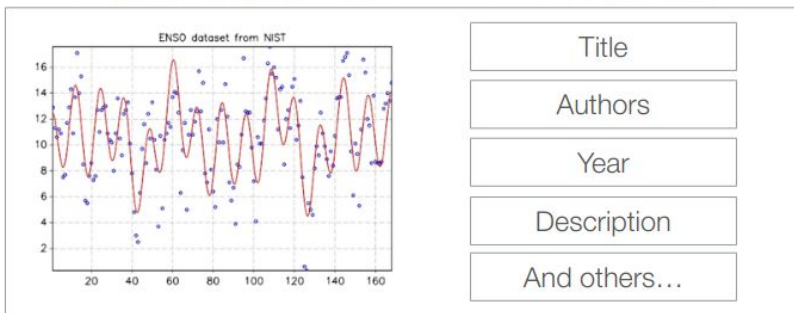
Unique



Persistent

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10.1234/exampledata

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Unique



Persistent

5. Enjoy the benefits

Findability

Track citations

Reusability

Measure impact





# Why is DOI important?

[The FAIR Guiding Principles for scientific data management and stewardship](https://www.go-fair.org/fair-principles/)

<https://www.go-fair.org/fair-principles/>

## 5. Enjoy the benefits

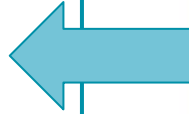


# Why is DOI important?

The DATA can be found

- Anywhere
- anytime
- with a click on a link
- NO separate search

**GET VISIBLE!**



## 5. Enjoy the benefits

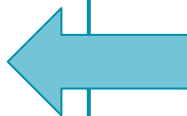


# Why is DOI important?

## 5. Enjoy the benefits

Incorporated into a **citation**, the DOI becomes a guaranteed location for the item cited because it will always resolve to the right web address (URL)

**GET CITED!**



Findability

Track citations

Reusability

Measure impact

# Why is DOI important?

## 5. Enjoy the benefits



With a DOI you can easily track who and where your data has been cited.

Think also about social media :-)

**GET CREDITS!**

# Why is DOI important?

## 5. Enjoy the benefits



With a DOI you can easily show the value of your data within the community and to your funding agencies

**BE VALUABLE!**

# How to get a DOI?

*“All of this is great, but I am starting to guess it is quite a lot of work, isn't it?”*



# How to get a DOI?

- Prepare your dataset
  - Remember that only well documented datasets can be reused!
    - Document your dataset (add good metadata to it! Some guidelines: <https://adc.met.no/node/4>)

# How to get a DOI?

- Prep
- 

The screenshot shows the Arctic Data Centre website. The header is dark blue with the ADC logo (a globe with a sun) and the text 'Arctic Data Centre'. A search bar is located in the top right. Below the header is an orange navigation bar with links: HOME, FIND DATA (with a dropdown arrow), SUPPORT (with a dropdown arrow), ABOUT, NEWS, and LOGIN. The 'Find data' section is highlighted in blue and contains a search form with a 'Full text search' dropdown, a text input field with the example 'humidity', and a 'Data Collection Period' section with a 'Start Date' input field. A dropdown menu for 'SUPPORT' is open, listing various services and information links. A map of the Arctic region is visible in the background on the right side.

Arctic Data Centre

Search

HOME FIND DATA SUPPORT ABOUT NEWS LOGIN

Find data

ADC SERVICES

DATASET UPLOAD ACCOUNT REQUEST

INFORMATION FOR DATA PROVIDERS

HOW TO DEFINE A DATASET

THE CONCEPT OF METADATA

SUBMIT DATA AS NETCDF/CF

COMPLIANCE CHECKERS

EXTRACTION OF DISCOVERY METADATA FROM NETCDF/CF FILES

INFORMATION TO DATA CONSUMERS

ISSUE TRACKER FOR ADC ACTIVITIES

Full text search

Combine search keywords: e.g. "humidity"

Data Collection Period

Start Date

yyyy-mm-dd

e/4)



# How to get a DOI?

- Prepare your dataset
  - Remember that only well documented datasets can be reused!
    - Document your dataset (add good metadata to it! Some guidelines: <https://adc.met.no/node/4>)
  - Remember that only understandable datasets can be reused!
    - Follow standards ([https://adc-test.met.no/dataset\\_validation/form](https://adc-test.met.no/dataset_validation/form))

# How to get a DOI?

Arctic Data Centre

HOME FIND DATA SUPPORT ABOUT NEWS

Home /

You are testing you dataset "pass.nc" against CF-1.6 convention

Congratulations! Your dataset is compliant with the required test.

IOOS Compliance Checker

## IOOS Compliance Checker Report

cf:1.6  
Corrective Actions

**Errors** 0

All high priority checks passed!

You are testing you dataset "nopass.nc" against ACDD convention

Your dataset is not compliant with the required test(s).

IOOS Compliance Checker

## IOOS Compliance Checker Report

acdd:1.3  
Corrective Actions

**Highly Recommended** 4

Name	Reasoning
Global Attributes	<ul style="list-style-type: none"><li>• title not present</li><li>• keywords not present</li><li>• summary not present</li><li>• Conventions does not contain 'ACDD-1.3'</li></ul>
variable "image" missing the following attributes:	<ul style="list-style-type: none"><li>• coverage_content</li><li>• long_name</li><li>• standard_name</li><li>• units</li></ul>
variable "valid100thSecs" missing the following attributes:	<ul style="list-style-type: none"><li>• coverage_content</li><li>• standard_name</li></ul>
variable "validTime" missing	<ul style="list-style-type: none"><li>• coverage_content</li><li>• standard_name</li></ul>

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  - Place your dataset on [thredds.met.no](https://thredds.met.no)
    - Structure your data (e.g. consider granularity, separate stations, specify featureType)

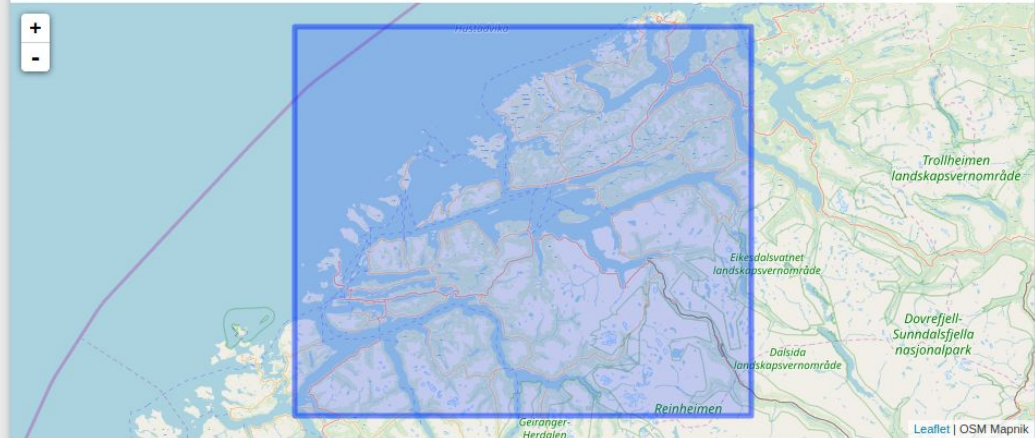


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  - Place your dataset on thredds.met.no
    - Structure your data (e.g. consider granularity, separate stations, specify featureType)
- Send me an email
  - Have patience

## Meteorological observations in tall masts for the Coastal Highway E39 project in Mid-Norway

LAST UPDATED: FEBRUARY 2, 2020



### Abstract:

This is a collection of high-frequency observations of wind speed and wind directions in several tall masts for the Coastal Highway E39 bridge project in Mid-Norway. The masts are 50-100 m high and located in complex terrain near the shoreline in Halsafjorden, Julsundet and Storfjorden in the Møre og Romsdal county of Norway. Observations of the three-dimensional wind vector are done at 2-4 levels in each mast, with a temporal frequency of 10 Hz. Both 10-minute mean of filtered 10 Hz (raw) data as well as the filtered 10 Hz recordings are provided. The dataset is corroborated with observed profiles of temperature at two masts, as well as precipitation, atmospheric pressure, relative humidity and dew point at one site. The first masts were erected in 2014 and the campaign will continue to at least 2024. The dataset is publicly available.

ISO Topic category: environment

adc.met.no

### [Landing Page Creator](#)

- 1) enable drupal module (M)
- 2) create content type on adc (M)
- 3) configure datacite account (M)

## Meteorological observations in tall masts for the Coastal Highway E39 project in Mid-Norway

LAST UPDATED: FEBRUARY 2, 2020



### Citation Info

DOI: <https://doi.org/10.21343/z9n1-qw63>

#### Citation:

Birgitte R. Furevik, Hálfán Ágústsson, Anette Lauen Borg, Finn Nyhammer, The E39 coastal highway observational dataset – atmospheric flow in complex coastal terrain in Mid-Norway, (2019) published by Norwegian Meteorological Institute.

License:



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## Meteorological observations in tall masts for the Coastal Highway E39 project in Mid-Norway

### ▼ Data Access

Type: HTTP

Resource: <https://thredds.met.no/thredds/catalog/obs/mast-svv-e39/catalog.html>

### ▼ Contact

Role: Investigator

Name: Magne Gausen

email: [magne.gausen@vegvesen.no](mailto:magne.gausen@vegvesen.no)

Institution: The Norwegian Public Roads Administration

### ▼ Time Extent

Defines the temporal extent or coverage of the dataset. Time is expressed in UTC. For collections the end date is empty.

Start Date: 2014-02-01 13:00

### ▼ Geographical Extent

ISO Topic category: environment

adc.met.no

### Landing Page Creator

- 1) enable drupal module (M)
- 2) create content type on adc (M)
- 3) configure datacite account (M)



M = manual  
A = automated

Extract metadata (M/A)

dataset.nc

mmd.xml

upload (M)

adc.met.no

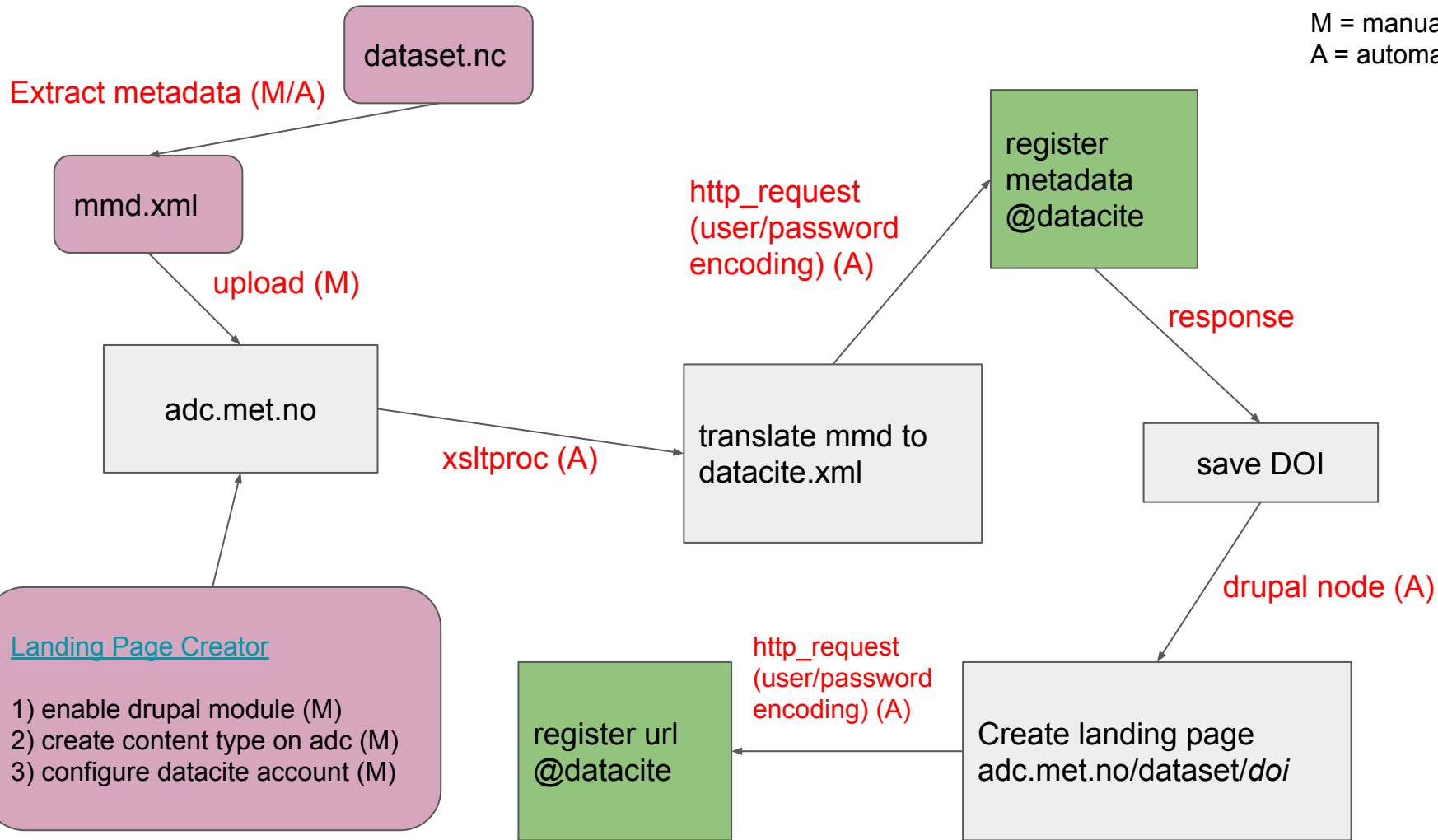
### Landing Page Creator

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```
Activities Terminal Tue 13:04 lara@pc4852:~/Downloads
File Edit View Search Terminal Help
<?xml version="1.0" encoding="UTF-8"?>
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  <mmd:metadata_identifier>324d9373-6d61-5e68-82c7-f3517447876c</mmd:metadata_identifier>
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  <mmd:abstract>This is a collection of high-frequency observations of wind speed and wind directions in several tall masts for the Coastal Highway E39 bridge project in Mid-Norway. The masts are 50-100 m high and located in complex terrain near the shoreline in Halsaffjorden, Julisundet and Storfjorden in the Møre og Romsdal county of Norway. Observations of the three-dimensional wind vector are done at 2-4 levels in each mast, with a temporal frequency of 10 Hz. Both 10-minute mean of filtered 10 Hz (raw) data as well as the filtered 10 Hz recordings are provided. The dataset is corroborated with observed profiles of temperature at two masts, as well as precipitation, atmospheric pressure, relative humidity and dew point at one site. The first masts were erected in 2014 and the campaign will continue to at least 2024. The dataset is publicly available. </mmd:abstract>
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  <mmd:dataset_production_status>In Work</mmd:dataset_production_status>
  <mmd:collection>ADC</mmd:collection>
  <mmd:collection>NSDN</mmd:collection>
  <mmd:last_metadata_update>2020-02-07T21:44:00Z</mmd:last_metadata_update>
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    <mmd:end_date/>
  </mmd:temporal_extent>
  <mmd:iso_topic_category>environment</mmd:iso_topic_category>
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    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC PRESSURE&gt;SURFACE PRESSURE</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC WINDS&gt;LOCAL WINDS</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC WINDS&gt;SURFACE WINDS</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC WINDS&gt;WIND DYNAMICS&gt;TURBULENCE</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC WINDS&gt;WIND DYNAMICS&gt;VERTICAL WIND VELOCITY/SPEED</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC WINDS&gt;WIND PROFILES</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC TEMPERATURE&gt;ATMOSPHERIC STABILITY</mmd:keyword>
    <mmd:keyword>ATMOSPHERE&gt;ATMOSPHERIC TEMPERATURE&gt;SURFACE TEMPERATURE&gt;AIR TEMPERATURE</mmd:keyword>
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  <mmd:geographic_extent>
    <mmd:rectangle srsName="EPSG:4326">
      <mmd:north>63.1</mmd:north>
      <mmd:south>62.2</mmd:south>
      <mmd:east>8.2</mmd:east>
      <mmd:west>5.9</mmd:west>
    </mmd:rectangle>
  </mmd:geographic_extent>
</dataset>
```



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A = automated



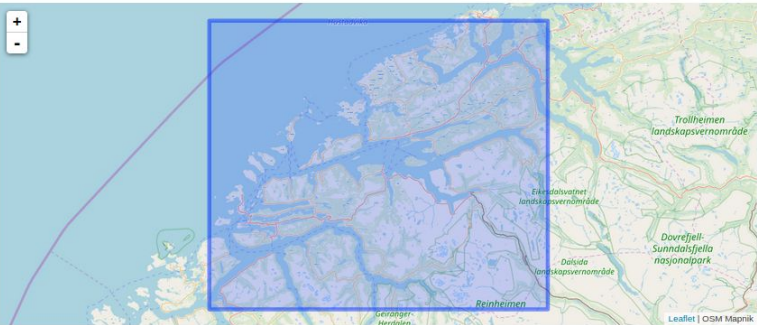
# Celebrate your DOI!

<https://doi.org/10.21343/z9n1-qw63>

Home / Meteorological observations in tall masts for the Coastal Highway E39 project in Mid-Norway

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LAST UPDATED: FEBRUARY 2, 2020



**Abstract:**  
This is a collection of high-frequency observations of wind speed and wind directions in several tall masts for the Coastal Highway E39 bridge project in Mid-Norway. The masts are 50-100 m high and located in complex terrain near the shoreline in Halsafjorden, Julsundet and Storfjorden in the Møre og Romsdal county of Norway. Observations of the three-dimensional wind vector are done at 2-4 levels in each mast, with a temporal frequency of 10 Hz. Both 10-minute mean of filtered 10 Hz (raw) data as well as the filtered 10 Hz recordings are provided. The dataset is corroborated with observed profiles of temperature at two masts, as well as precipitation, atmospheric pressure, relative humidity and dew point at one site. The first masts were erected in 2014 and the campaign will continue to at least 2024. The dataset is publicly available.

**ISO Topic category:** environment

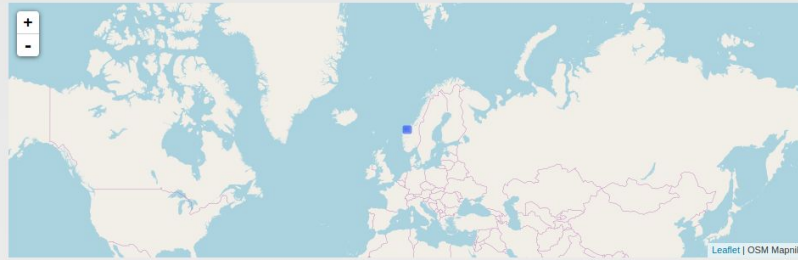
**Citation Info**

DOI: <https://doi.org/10.21343/z9n1-qw63>

<https://adc.met.no/landing-page-collector>

Home / Landing Page Collector

## Landing Page Collector



**Title**

**Apply**

**Meteorological observations in tall masts for the Coastal Highway E39 project in Mid-Norway**

LAST UPDATED: FEBRUARY 2, 2020

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# Thank you!

Further reading:

FAIR data

<https://www.go-fair.org/fair-principles/>

<https://septentrio.uit.no/index.php/SCS/issue/view/451>

Conventions:

[http://wiki.esipfed.org/index.php/Attribute\\_Convention\\_for\\_Data\\_Discovery\\_1-3](http://wiki.esipfed.org/index.php/Attribute_Convention_for_Data_Discovery_1-3)

<http://cfconventions.org/standard-names.html>

DOI

<https://datacite.org/>

<https://www.doi.org/faq.html>