

# Carl Friedrich Gauss The Global Surveyor of the Year 2021

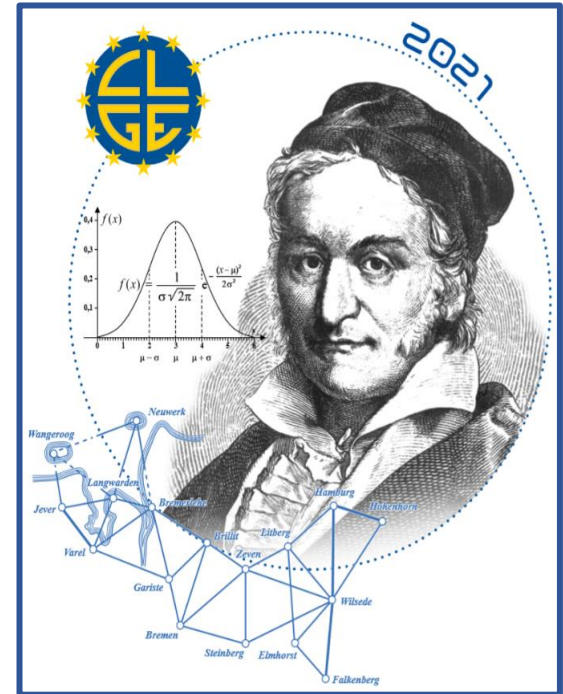
Introduction by Prof. Dr. Hansjörg Kutterer, President of DVW, 23.03.2021

# (Johann) Carl Friedrich Gauss

The Global Surveyor of the Year 2021

- \* 30. April 1777 in Braunschweig
  - Gifted child of working-class parents
  - Pioneering work in four fields of science and knowledge:
    - mathematics,
    - astronomy,
    - physics and
    - land surveying

† 23. Februar 1855 in Göttingen



# Carl Friedrich Gauss

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*An anecdote on the child prodigy Gauss:*

- *When Gauss was seven, he confidently solved an arithmetic series problem of adding all the integers from 1 to 100.*
- *Gauss's realized that pairwise addition of terms from opposite ends of the list yielded identical intermediate sums:*
  - $1 + 100 = 101, 2 + 99 = 101, \dots$
  - $100 \times (100 + 1) / 2 = 5050$

1	2	3	...	98	99	100
100	99	98	...	3	2	1
101	101	101	...	101	101	101

$$\frac{n \cdot (n + 1)}{2}.$$

# Carl Friedrich Gauss

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## *Celebrating a multi-talented genius*

*As a surveyor – open for solving problems –*

- he became involved and committed fostered by governmental needs regarding meridian arc measures and triangulation networks.*

*As a mathematician – looking for insights –*

- he has provided fundamental developments in all fields of mathematics related to surveying.*

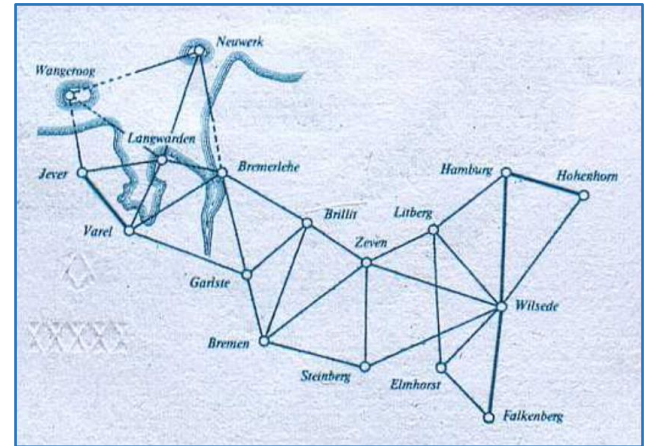


# Carl Friedrich Gauss

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*The surveyor:*

- *As early as 1818, Carl Friedrich Gauss was concerned with triangulation.*
- *His goal was to connect the Kingdom of Hanover (Hanover / England) to the Danish triangulation.*
- *On May 9th, 1820 Gauss received the official order from King George IV to triangulate the Kingdom of Hanover.*

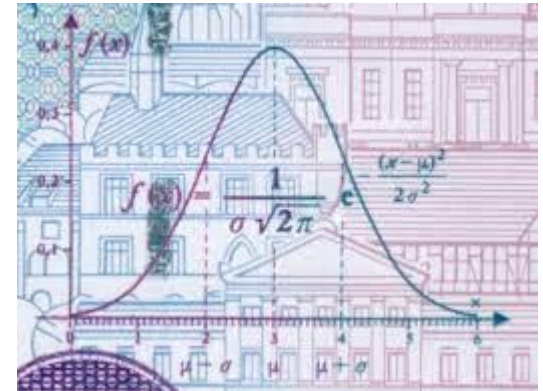


# Carl Friedrich Gauss

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*The theoretician w.r.t. surveying:*

- *Linear equation systems*
- *Least-squares adjustment*
- *Error propagation law and Gaussian distribution*
- *Differential geometry*
- *Conformal mapping*
- ...

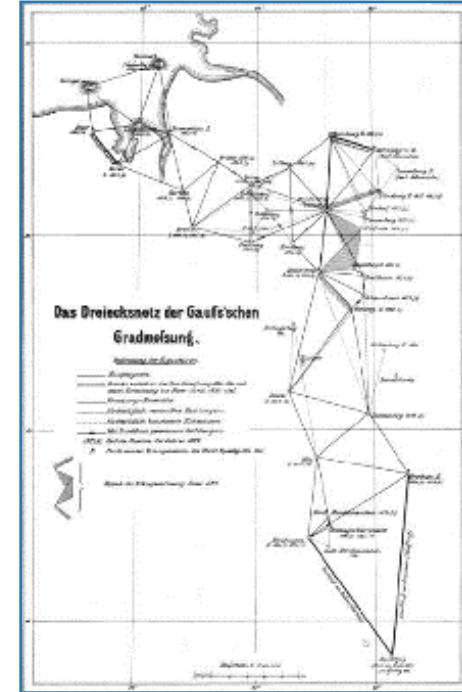


# Carl Friedrich Gauss

The Global Surveyor of the Year 2021

*The practitioner w.r.t. surveying:*

- *Invention of the heliotrope*
- *Geodetic observations*
- *Astronomical observations*
- *Planning, preparation, observation, calculation and analysis of the triangulation network*
- ...



# ***Carl Friedrich Gauss***

The Global Surveyor of the Year 2021



***Where would our profession be without him?***

***Where would we be without him?***

***Perfect choice!***

***Congratulations!***