

Measurements for water

Rolf Hut

Meten aan water: signalen





Meten aan Water Signalen

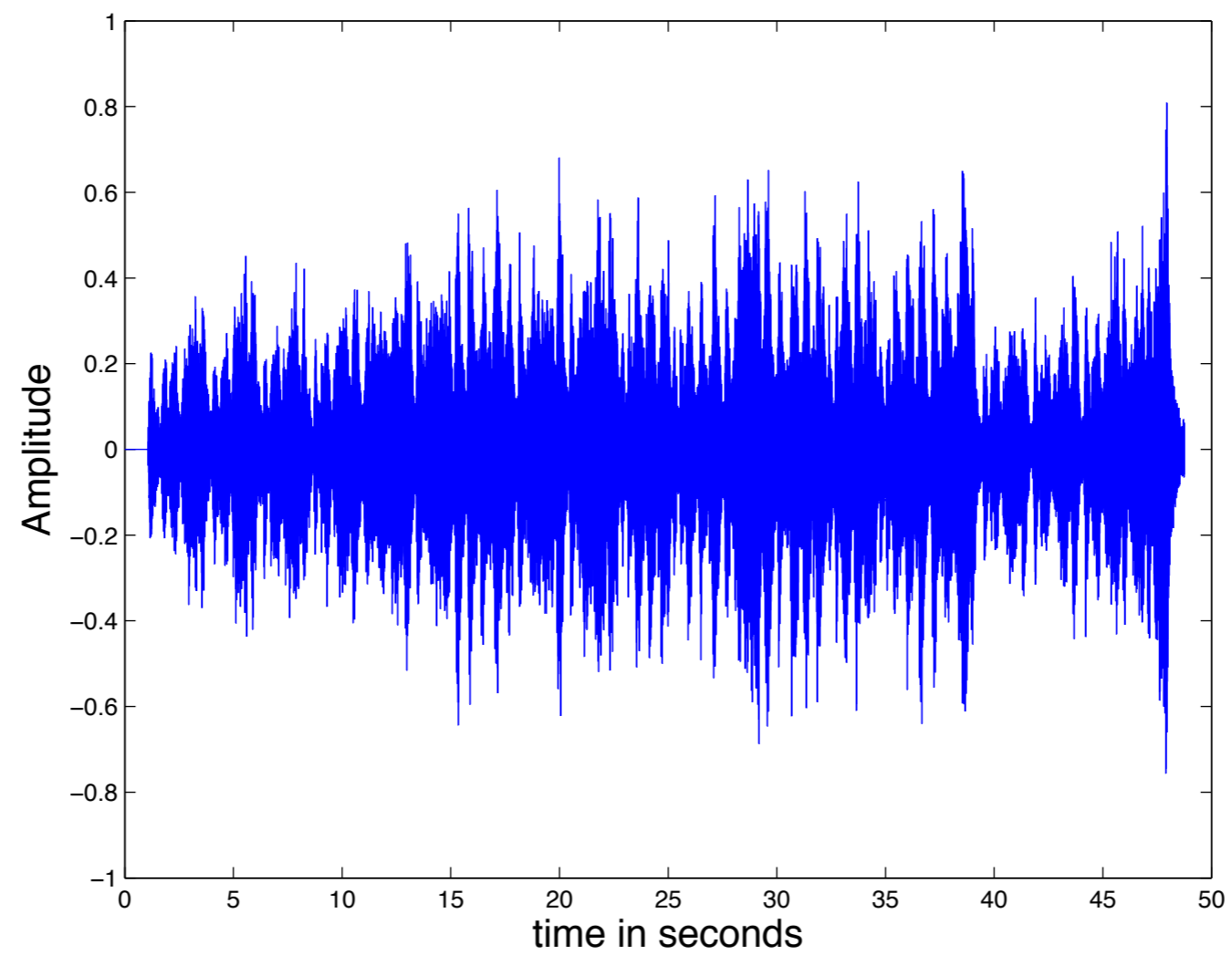
Rolf Hut

Signalen

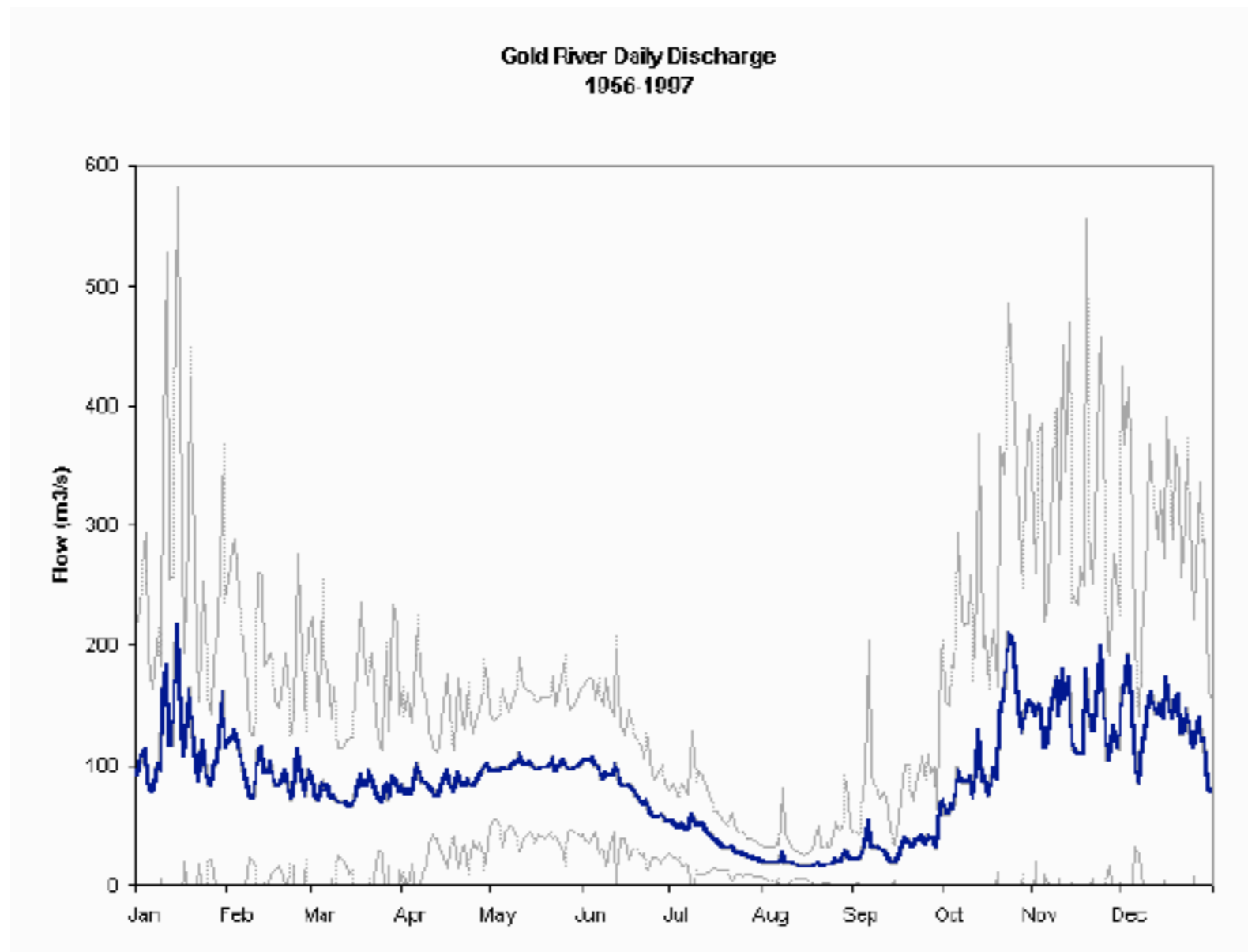
Signalen



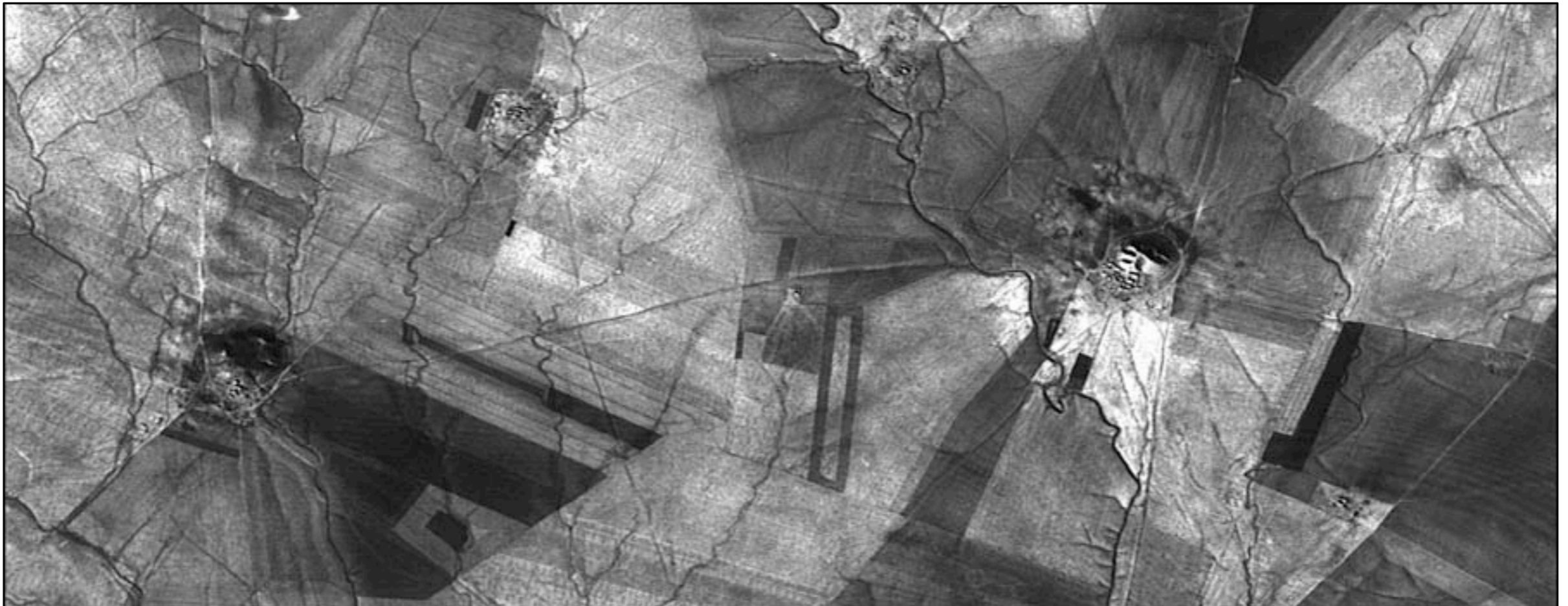
Signalen



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Signalen

- signaal = verzameling (meet)waarden waarbij ordening van belang is

$$f : \mathbb{C}^n \rightarrow \mathbb{C}$$

Signalen

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$$f : \mathbb{C}^n \rightarrow \mathbb{C}$$

$$f : \mathbb{R}^n \rightarrow \mathbb{C}$$

$$f : \mathbb{R} \rightarrow \mathbb{R} \quad \text{1-D real signal}$$

Speciale Signalen

- periodic signals

$$f(t) = f(t + T)$$

- Complex exponential functions

$$f(t) = C e^{at}$$

- Periodic Complex Signals

$$f(t) = e^{i\omega_0 t}$$

$$e^{i\omega_0 t} = \cos \omega_0 t + j \sin \omega_0 t$$

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$$A \cos(\omega_0 t + \phi) = \frac{A}{2} e^{i\phi} e^{i\omega_0 t} + \frac{A}{2} e^{-i\phi} e^{-i\omega_0 t}$$

Speciale Signalen

- Step function

$$u(t) = \begin{cases} 0, & t < 0 \\ 1, & t > 0 \end{cases}$$

- Impulse function

$$u(t) = \int_{-\infty}^t \delta(t) dt$$

Meet Signalen

$$f_p(t) = \sum_{-\infty}^{\infty} f(nT) \delta(t - nT)$$

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