
(Source: http://www.ga.gov.au/scientific-topics/hazards/flood/basics/where)

Challenges in assessing the hydrology of extreme events under climate change conditions

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Climate Change Impact Modelling

LETTERS
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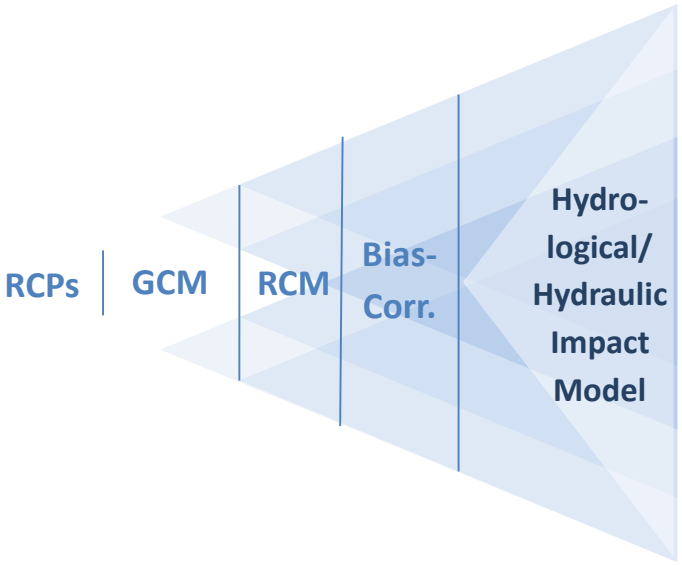
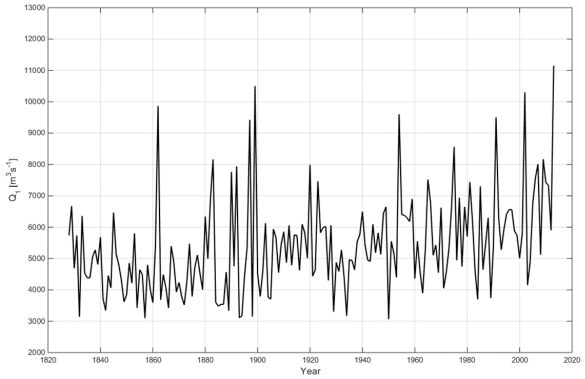
nature climate change

Global flood risk under climate change





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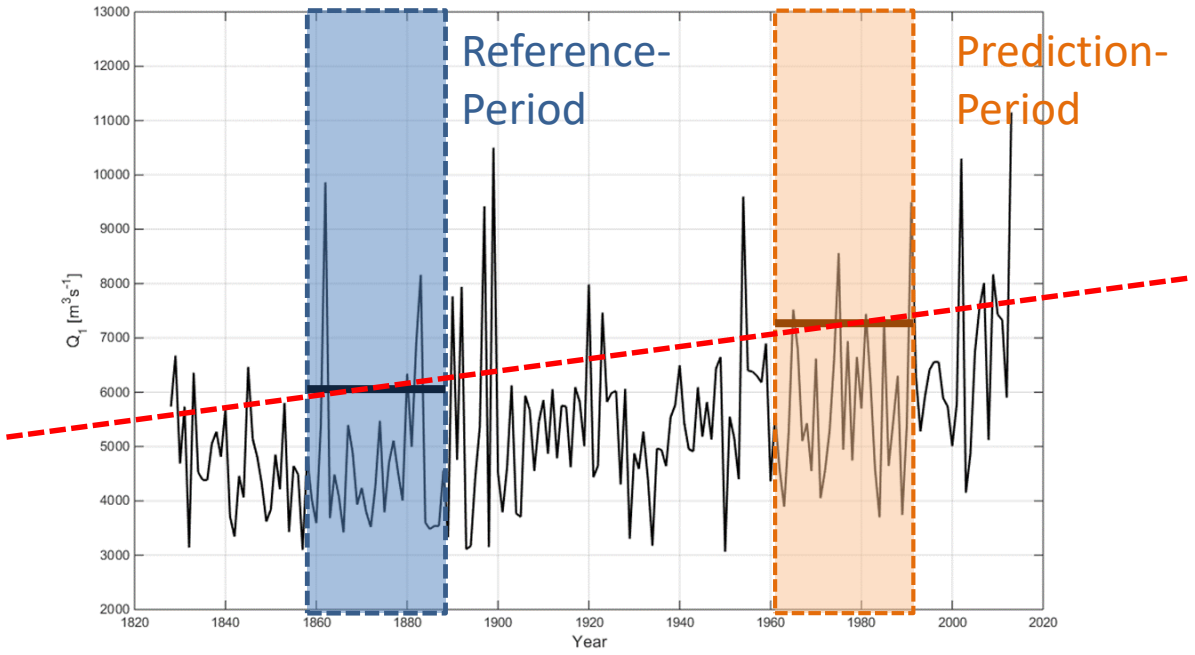

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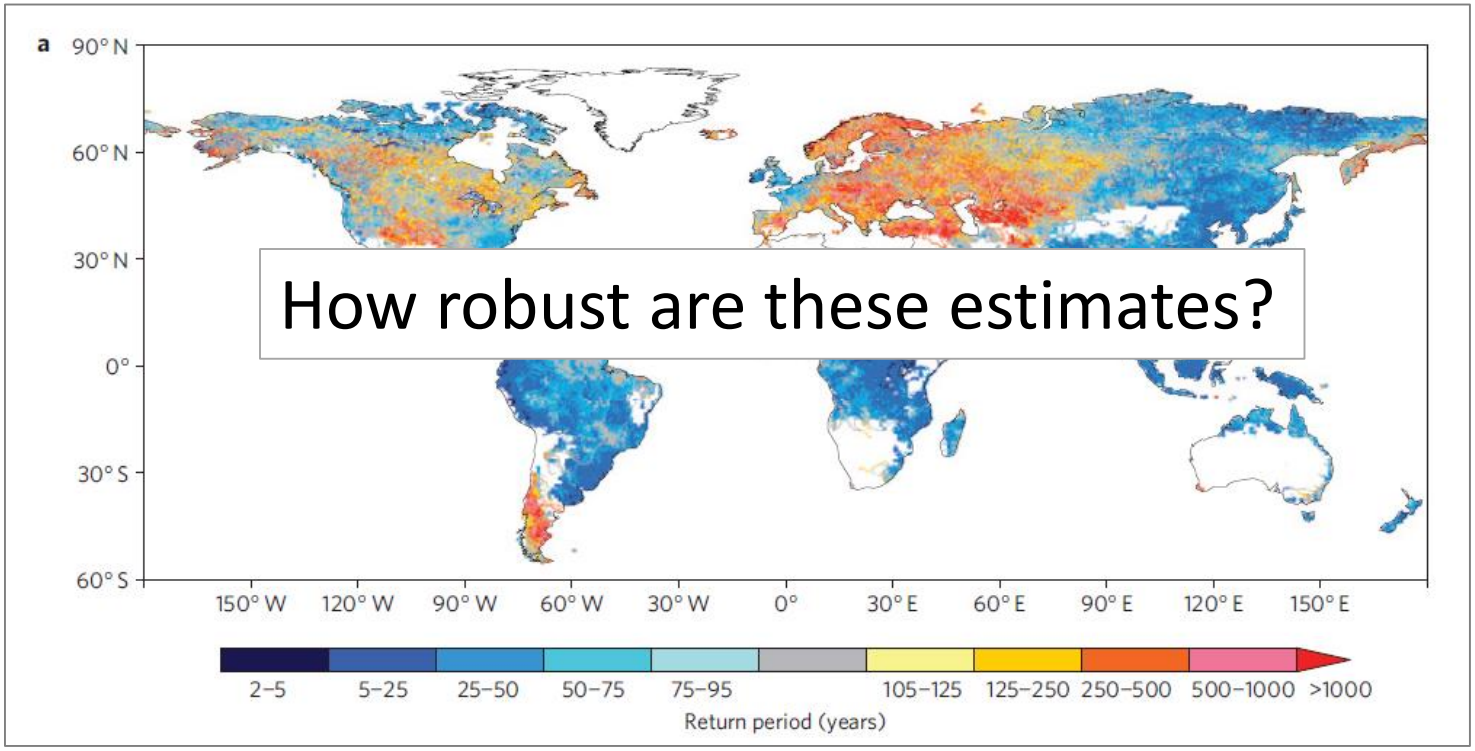
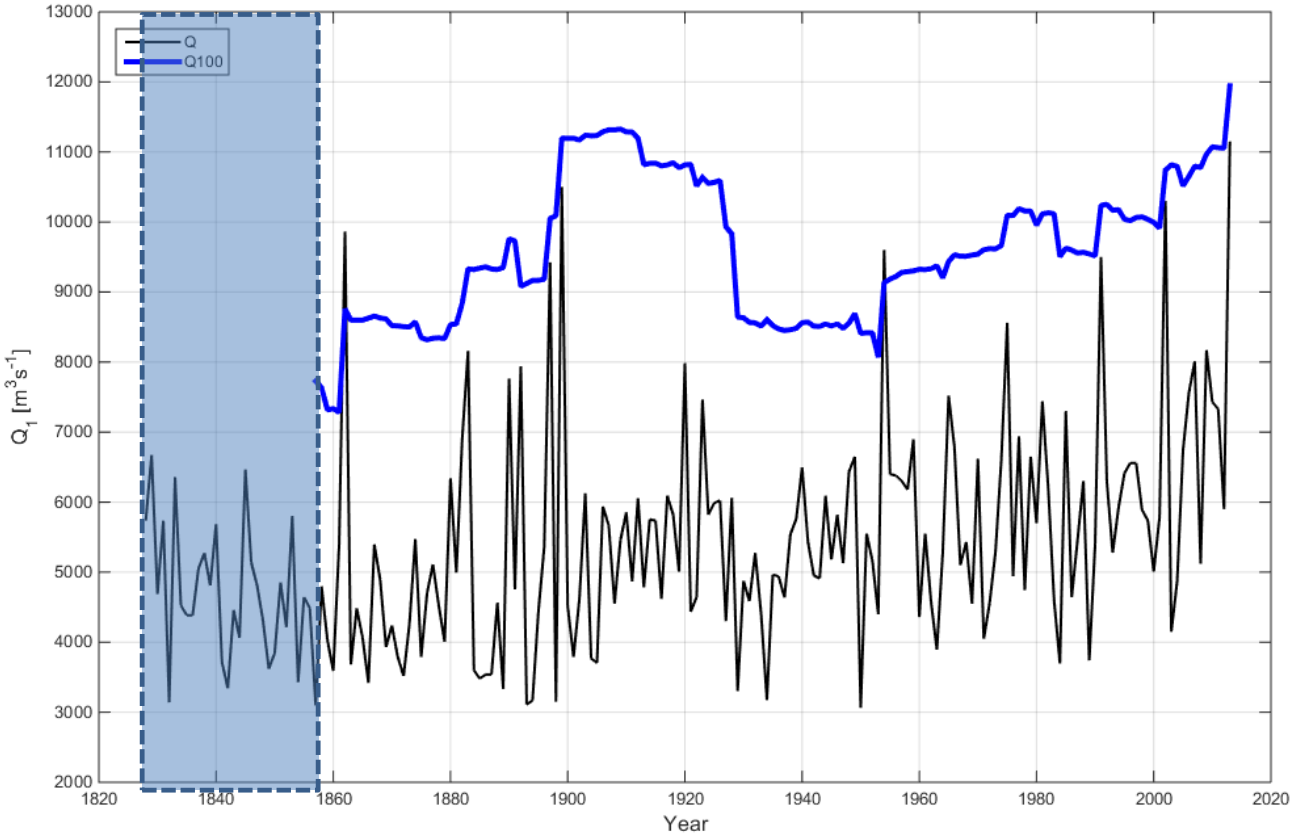


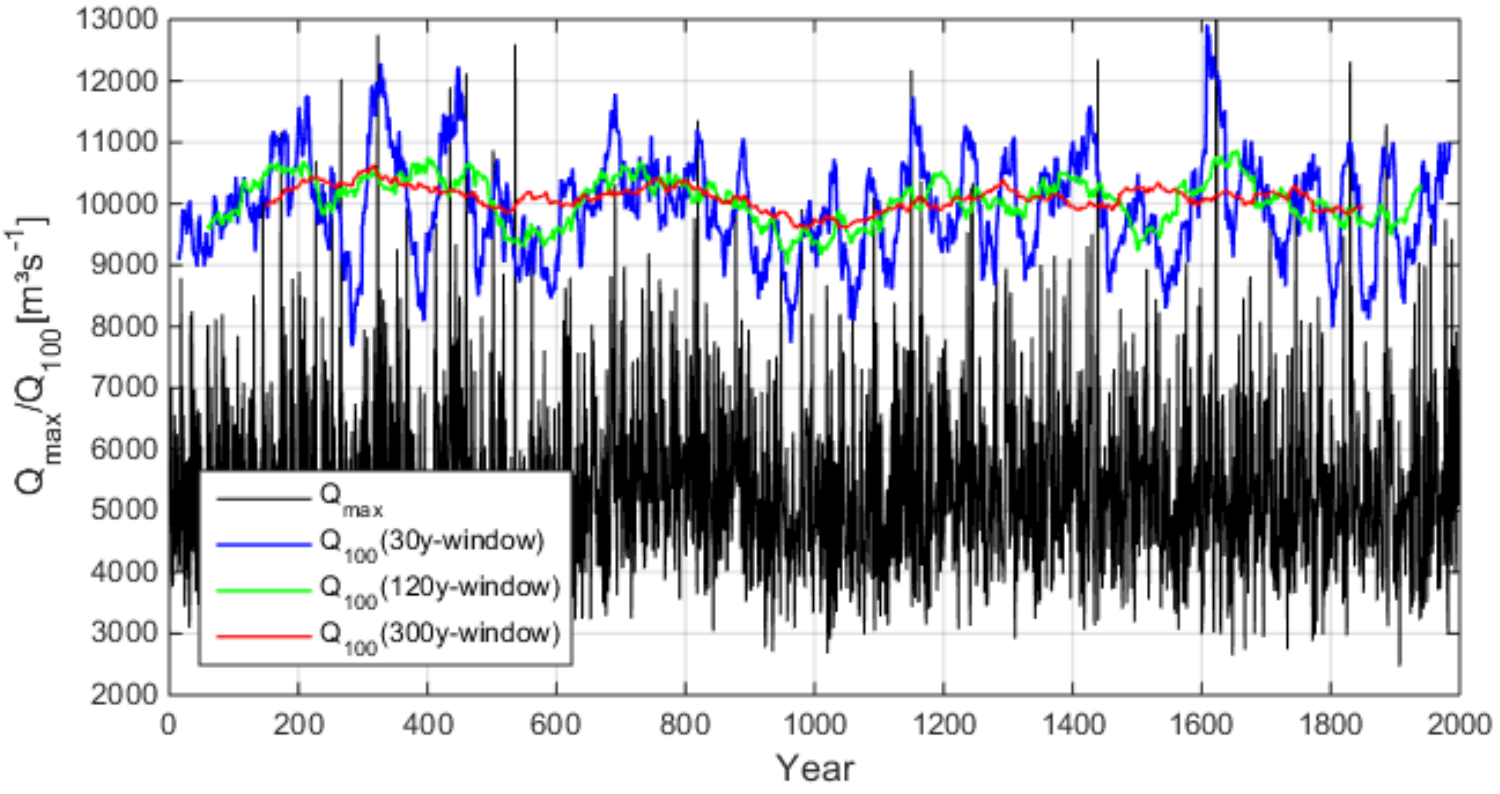
How robust are these estimates?

Flood Extremes - Q_{100}

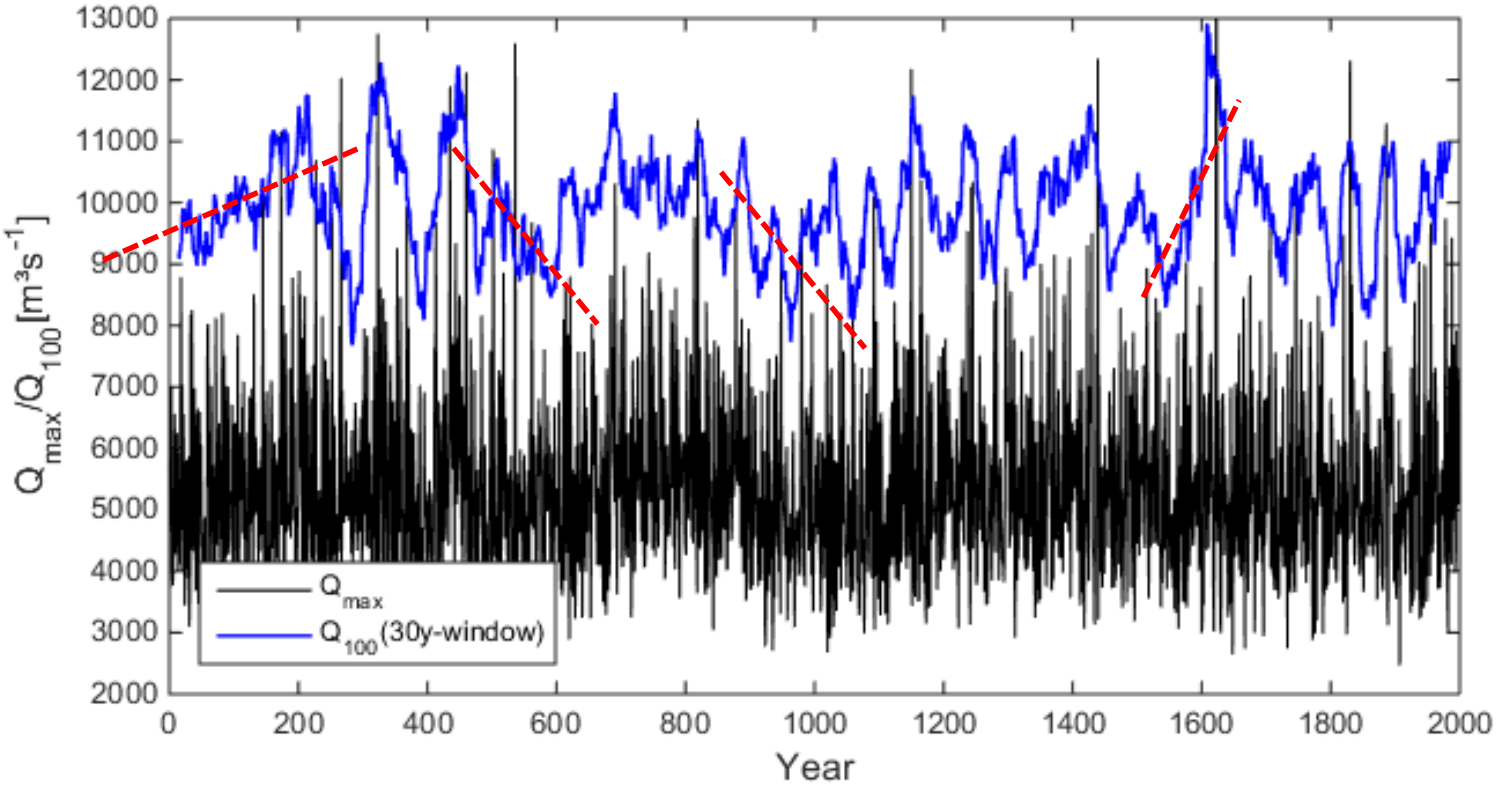
Danube (Klosterneuburg)



Flood Extremes – Q_{100}



Trends in Flood Extremes – Q_{100}



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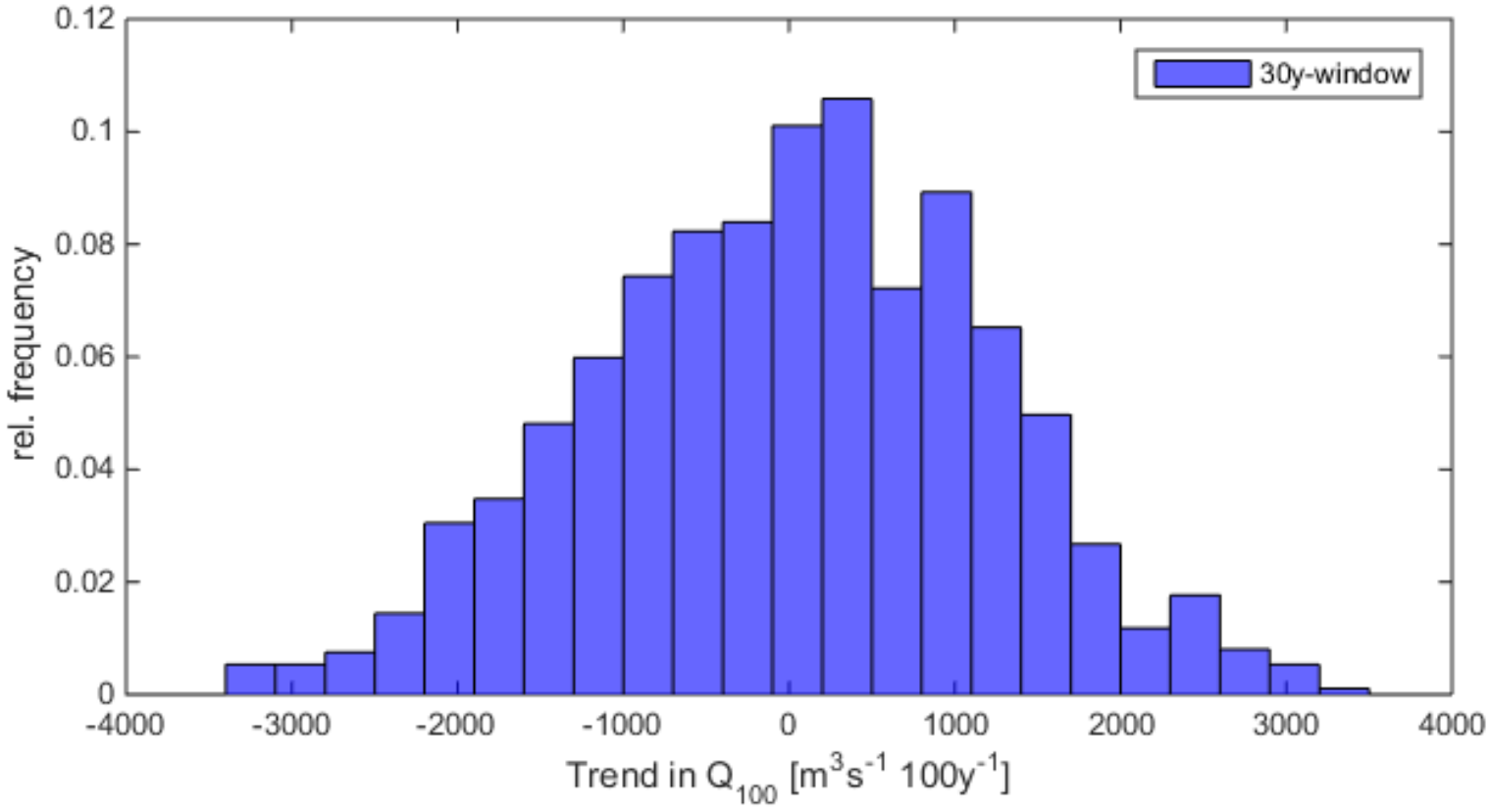

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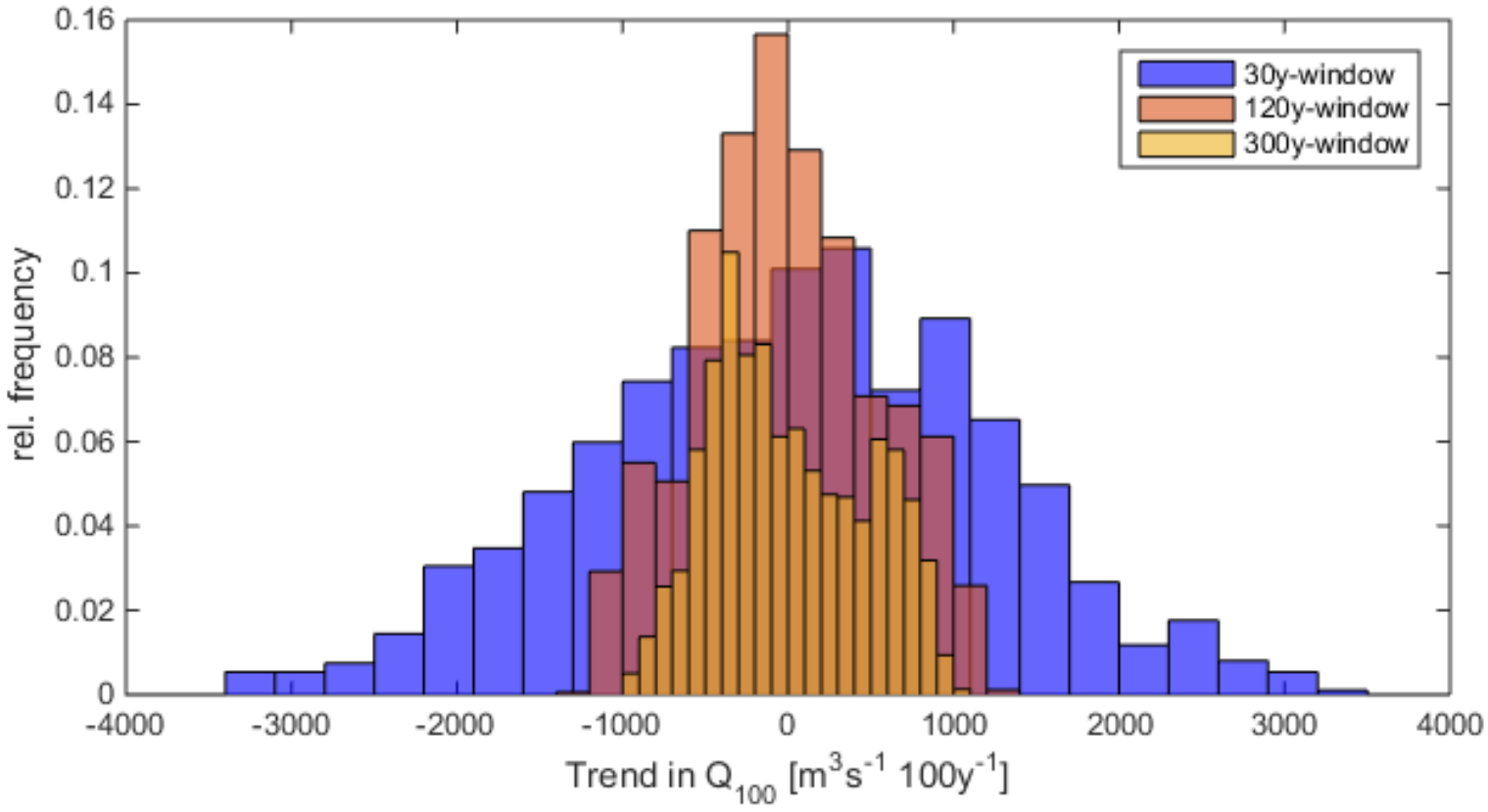

Trends in Flood Extremes – Q_{100}

	Trends in Q_{100} [$m^3s^{-1}100y^{-1}$]											
	Danube (Klosterneuburg)			Rhine (Rees)			Elbe (Neu Darchau)			Thames (Kingston)		
EVD	min.	max.	Q_{100} (data)	min.	max.	Q_{100} (data)	min.	max.	Q_{100} (data)	min.	max.	Q_{100} (data)
Extreme Value (Gumbel)	-3,457 (1,244)	3,486 (1,336)	10,071	-2,875 (1,552)	2,953 (1,634)	13,991	-1,285 (664)	1,198 (554)	4,338	-69 (68)	68 (65)	688
Weibull	-2,171 (950)	2,314 (1,092)	9,155	-956 (741)	938 (753)	11,078	-2,617 (1,605)	2,572 (1,694)	3,700	-81 (37)	80 (37)	576
log-Normal	-6,222 (4,218)	6,116 (3,067)	9,672	-3,113 (3,009)	3,112 (3,067)	13,202	-1,048 (653)	1,056 (687)	4,388	-129 (110)	132 (110)	656

Robust Estimation of Flood Extremes - Q_{100}

A small stream cannot produce a major Mississippi River flood, for much the same reason that an ordinary barnyard fowl cannot lay an egg a yard in diameter”

(Horton, 1936)