

Supplementary Materials: Hydrological Response to ~30 years of Agricultural Surface Water Management

Giulia Sofia * and Paolo Tarolli

Table S1. *P*-values of the statistical significance of the percentage of the total storm period that has occurred at the start of the heaviest burst (BrLoc%), number of bursts (Br_n), hyetograph triangularity (TRN), asymmetry of the storm (asym) and their interaction (labelled with) on the average ponding time, or on the ponding time of each considered saturation (sat) and return period (RT). * indicates statistical significance at $p < 0.05$.

	Avg.	sat = 1%			sat = 50%			sat = 100%		
		Rp = 2 yr	Rp = 50 yr	Rp = 200 yr	Rp = 2 yr	Rp = 50 yr	Rp = 200 yr	Rp = 2 yr	Rp = 50 yr	Rp = 200 yr
BrLoc%	$4.8 \times 10^{-4} *$	$5.1 \times 10^{-3} *$	$1.3 \times 10^{-3} *$	$9.3 \times 10^{-4} *$	$2.1 \times 10^{-3} *$	$3.1 \times 10^{-3} *$	--	--	--	--
TRN	$1.9 \times 10^{-4} *$	$1.5 \times 10^{-3} *$	$2.6 \times 10^{-3} *$	$1.0 \times 10^{-2} *$	$1.0 \times 10^{-3} *$	$4.7 \times 10^{-4} *$	$2.1 \times 10^{-2} *$	--	--	--
Br _n	$1.0 \times 10^{-4} *$	$8.0 \times 10^{-3} *$	$9.4 \times 10^{-2} *$	$5.9 \times 10^{-4} *$	--	$5.8 \times 10^{-5} *$	$4.2 \times 10^{-3} *$	--	--	--
asym	$5.6 \times 10^{-3} *$	--	$2.0 \times 10^{-2} *$	$6.0 \times 10^{-4} *$	--	$1.2 \times 10^{-4} *$	$7.1 \times 10^{-3} *$	--	--	--
BrLoc%:TRN	$8.9 \times 10^{-3} *$	--	$1.4 \times 10^{-2} *$	$5.2 \times 10^{-2} *$	$5.2 \times 10^{-3} *$	$5.2 \times 10^{-3} *$	--	--	--	--
BrLoc%:Br _n	$1.0 \times 10^{-4} *$	--	$3.8 \times 10^{-2} *$	$3.9 \times 10^{-4} *$	--	$4.2 \times 10^{-5} *$	$2.7 \times 10^{-3} *$	--	--	--
TRN:Br _n	$3.4 \times 10^{-4} *$	$2.5 \times 10^{-2} *$	--	$1.7 \times 10^{-3} *$	--	$1.8 \times 10^{-4} *$	$1.3 \times 10^{-2} *$	--	--	--
BrLoc%:asym	$5.1 \times 10^{-3} *$	$4.7 \times 10^{-3} *$	$4.5 \times 10^{-2} *$	$7.4 \times 10^{-2} *$	--	$3.2 \times 10^{-3} *$	--	--	--	--
TRN:asym	$2.1 \times 10^{-3} *$	$1.5 \times 10^{-2} *$	$7.5 \times 10^{-2} *$	$4.8 \times 10^{-2} *$	--	$2.2 \times 10^{-3} *$	$7.0 \times 10^{-2} *$	--	--	--

Table S2. *P*-values of the statistical significance of the percentage of the total storm period that has occurred at the start of the heaviest burst (BrLoc%), number of bursts (Br_n), hyetograph triangularity (TRN), asymmetry of the storm (asym) and their interaction (labelled with :) on the average uNSI, or on the uNSI of each considered saturation (sat) and return period (Rp). * indicates statistical significance at $p < 0.05$.

	sat = 1%				sat = 50%			sat = 100%		
	Avg.	Rp = 2 yr	Rp = 50 yr	Rp = 200 yr	Rp = 2 yr	Rp = 50 yr	Rp = 200 yr	Rp = 2 yr	Rp = 50 yr	Rp = 200 yr
BrLoc%	$7.7 \times 10^{-3} *$	$1.1 \times 10^{-2} *$	$1.1 \times 10^{-2} *$	$5.1 \times 10^{-2} *$	$1.6 \times 10^{-2} *$	$1.0 \times 10^{-2} *$	$2.1 \times 10^{-2} *$	--	$2.3 \times 10^{-2} *$	$1.8 \times 10^{-2} *$
TRN	$2.4 \times 10^{-3} *$	$6.2 \times 10^{-3} *$	$4.4 \times 10^{-3} *$	$6.3 \times 10^{-3} *$	$2.8 \times 10^{-3} *$	$1.5 \times 10^{-3} *$	$8.0 \times 10^{-3} *$	$4.2 \times 10^{-3} *$	$1.5 \times 10^{-3} *$	$9.6 \times 10^{-4} *$
Br _n	$1.0 \times 10^{-2} *$	$4.1 \times 10^{-3} *$	$4.6 \times 10^{-3} *$	$3.0 \times 10^{-2} *$	$1.4 \times 10^{-2} *$	$7.2 \times 10^{-3} *$	$5.6 \times 10^{-2} *$	$7.4 \times 10^{-4} *$	$4.6 \times 10^{-4} *$	$2.9 \times 10^{-4} *$
asym	--	$9.1 \times 10^{-2} *$	--	--	$3.8 \times 10^{-2} *$	--	--	$2.3 \times 10^{-3} *$	$6.1 \times 10^{-3} *$	$6.9 \times 10^{-3} *$
BrLoc%:TRN	$2.9 \times 10^{-2} *$	--	$3.2 \times 10^{-2} *$	--	$7.0 \times 10^{-3} *$	--	--	--	$7.6 \times 10^{-2} *$	$3.2 \times 10^{-2} *$
BrLoc%:Br _n	--	--	--	--	$2.3 \times 10^{-2} *$	--	--	$2.5 \times 10^{-3} *$	$1.4 \times 10^{-3} *$	$1.3 \times 10^{-3} *$
TRN:Br _n	--	--	$8.8 \times 10^{-2} *$	--	$1.7 \times 10^{-3} *$	$4.1 \times 10^{-2} *$	--	$8.7 \times 10^{-3} *$	$6.9 \times 10^{-3} *$	$7.3 \times 10^{-3} *$
BrLoc%:asym	--	--	--	--	$4.4 \times 10^{-3} *$	--	$1.9 \times 10^{-2} *$	$3.2 \times 10^{-2} *$	$2.9 \times 10^{-2} *$	$1.9 \times 10^{-2} *$
TRN:asym	$3.2 \times 10^{-2} *$	$3.1 \times 10^{-2} *$	$6.2 \times 10^{-3} *$	--	--	--	--	$3.1 \times 10^{-2} *$	--	$6.4 \times 10^{-2} *$

