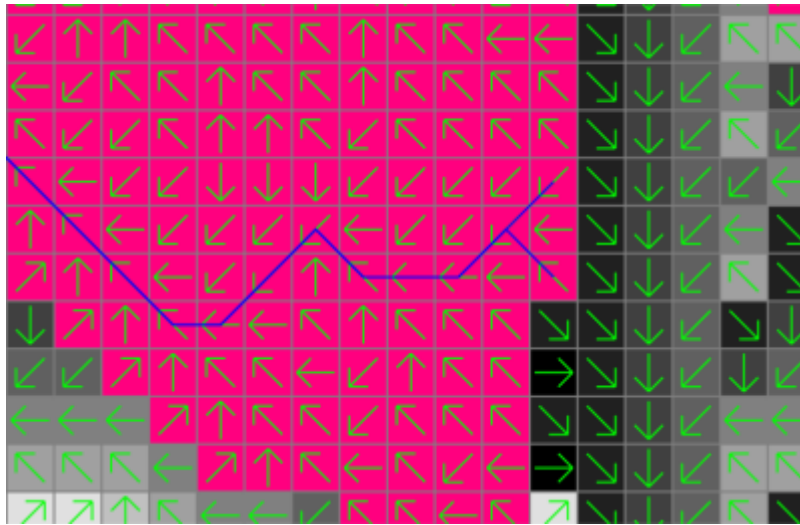


Efficient longest flow path algorithm

Workspace

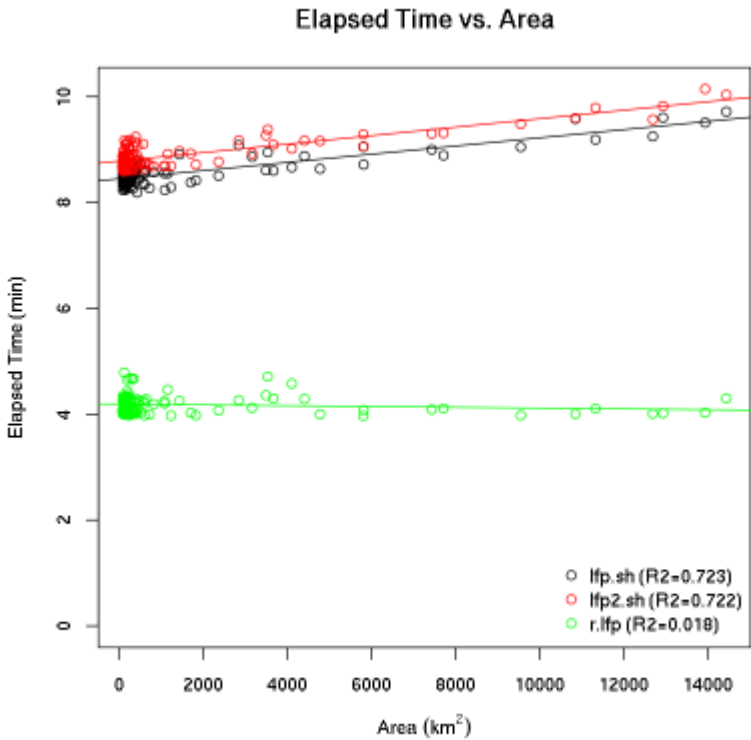


```
\[ \def\LFP{\overrightarrow{\text{LFP}}} \def\FP{\overrightarrow{\text{FP}}} \def\FL{\text{FL}}
\def\DFL{\text{DFL}} \def\UFL{\text{UFL}} \def\LFL{\text{LFL}} \]
```

A flow path FP_i is the watercourse between a pair of two points i within a watershed and the longest flow path LFP is defined as

```
\[ \text{LFP} \in \left\{ \text{FP}_i; \middle\text{vert}; \left| \text{FP}_i \right| \geq \left| \text{FP}_j \right|; \text{forall } j \neq i \right\} . \]
```

The longest flow path plays an important role in hydrologic modeling, but its computation requires multi-step raster calculations for each watershed. This research project aims to improve the current process and efficiency of computing the longest flow path for a lot of watersheds.



Method	lfp.sh	lfp2.sh	r.lfp	Coming soon
Elapsed time	3h 48m	9h 8m	6h 46m	56s

project

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