APPENDIX D

ACCURACY OF π_5 PREDICTOR EQUATION

1. Plot observed $\overline{h}_{BEND}/\overline{h}_{Sf}$ vs. π_5.

Table D.1. Data Required to Estimate Trend Line

Q (cfs)	Bend	$\overline{h}_{BEND}/\overline{h}_{Sf}$	π_5
8	Type I	1.23	2.80
8	Type III	0.18	6.87
12	Type I	1.12	2.56
12	Type III	0.24	6.03
16	Type I	1.34	2.45
16	Type III	0.32	5.71

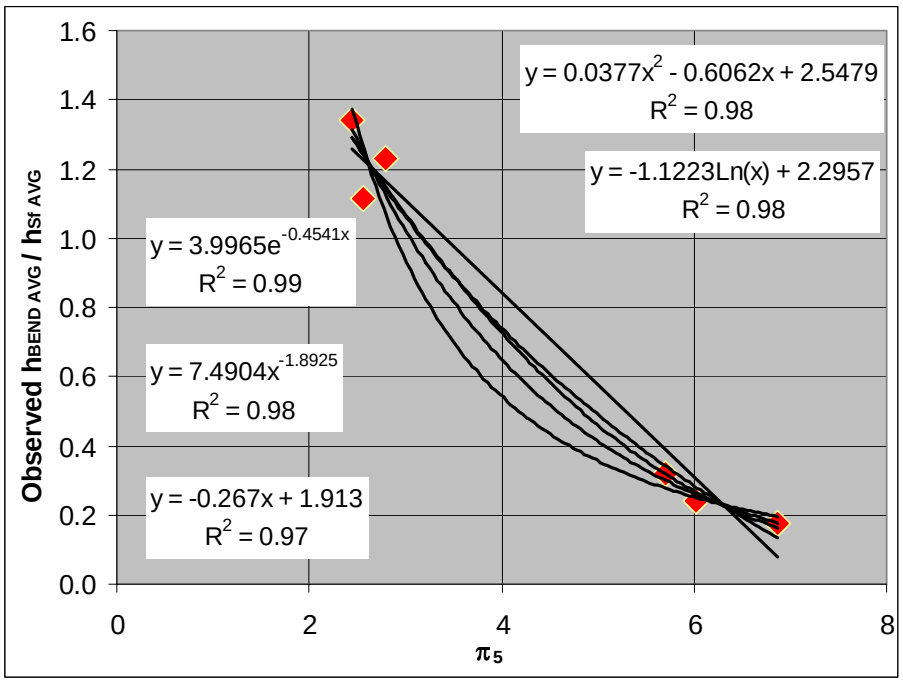

Figure D.1. Observed Trend Lines

2. Determine a trend line that interpolates a significant relationship between $\bar{h}_{BEND}/\bar{h}_{Sf}$ vs. π_5.

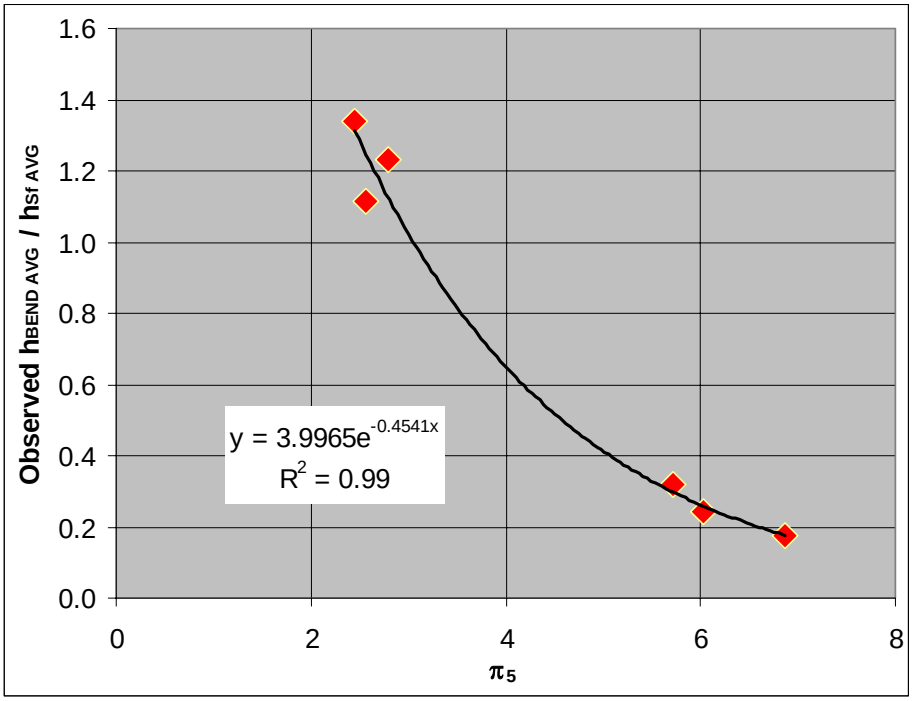

Figure D.2. Trend Line with Significant Relationship

3. Use equation defining interpolated trend line to calculate predicted $\bar{h}_{BEND}/\bar{h}_{Sf}$.

Predictor Equation for π_5

$$y = 3.9965e^{-0.4541x}$$

where:

$y = \bar{h}_{BEND}/\bar{h}_{Sf}$; and

$x = \pi_5$.

Table D.2. Predicted $\bar{h}_{BEND}/\bar{h}_{Sf}$ Results

Q (cfs)	Bend	$\bar{h}_{BEND}/\bar{h}_{Sf}$	π_5	Predicted $\bar{h}_{BEND}/\bar{h}_{Sf}$
8	Type I	1.23	2.80	1.12
8	Type III	0.18	6.87	0.18
12	Type I	1.12	2.56	1.25
12	Type III	0.24	6.03	0.26
16	Type I	1.34	2.45	1.31
16	Type III	0.32	5.71	0.30

4. Calculate percent error and absolute percent error between predicted $\bar{h}_{BEND}/\bar{h}_{Sf}$ and observed $\bar{h}_{BEND}/\bar{h}_{Sf}$.

Table D.3. Percent Error and Absolute Percent Error Results

Q (cfs)	Bend	$\bar{h}_{BEND}/\bar{h}_{Sf}$	π_5	Predicted $\bar{h}_{BEND}/\bar{h}_{Sf}$	Percent Error (%)	Abs. Percent Error (%)
8	Type I	1.23	2.80	1.12	-8.83	8.83
8	Type III	0.18	6.87	0.18	0.09	0.09
12	Type I	1.12	2.56	1.25	11.84	11.84
12	Type III	0.24	6.03	0.26	6.55	6.55
16	Type I	1.34	2.45	1.31	-1.86	1.86
16	Type III	0.32	5.71	0.30	-6.20	6.20
				Average Error	0.26	5.90

5. Plot observed $\overline{h}_{BEND}/\overline{h}_{Sf}$ and predicted $\overline{h}_{BEND}/\overline{h}_{Sf}$ to observe linear relationship.

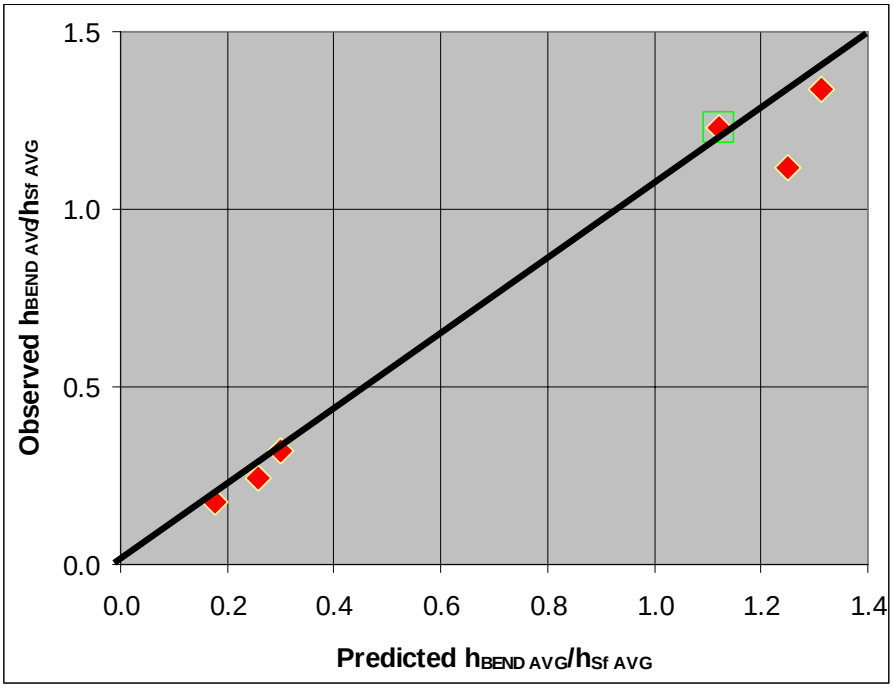

Figure D.3. Observed Linear Relationship