

Spatio-temporal metrics that distinguish plays in field hockey : a pilot study

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Spatio-temporal metrics that distinguish plays in field hockey: A pilot study

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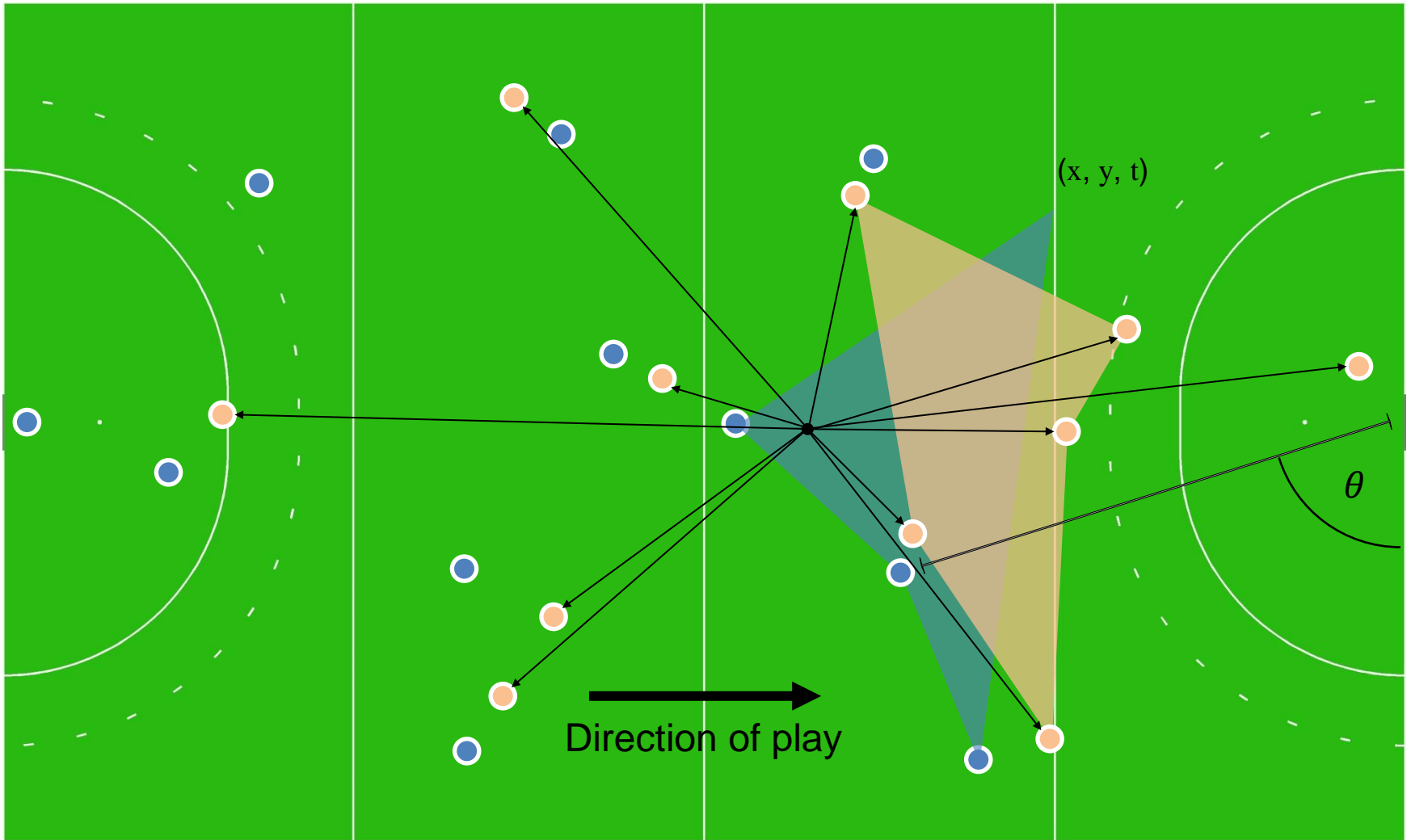
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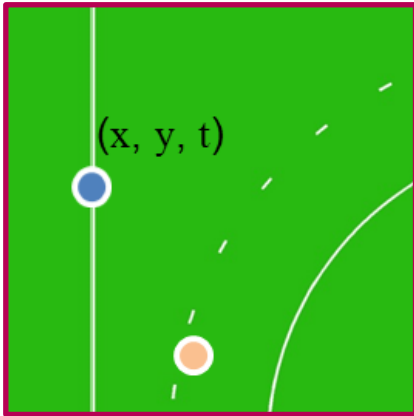


Introduction

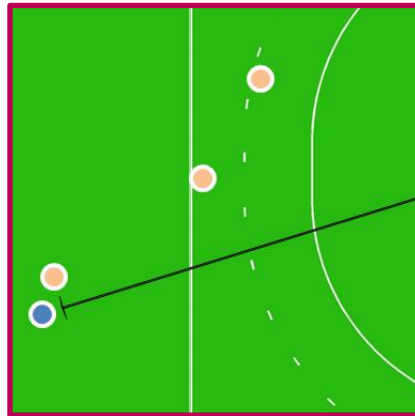


Introduction

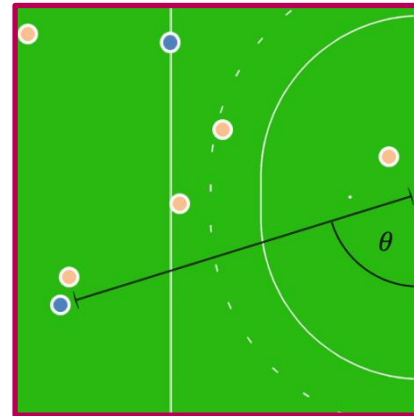
Positions



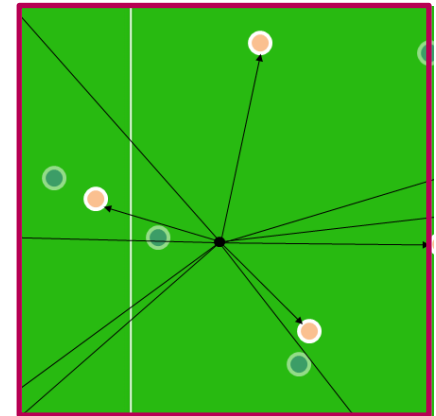
Distances



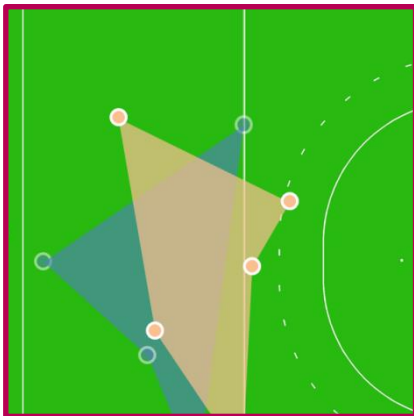
Angles



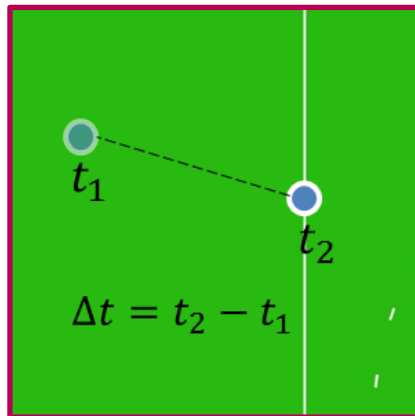
Spread



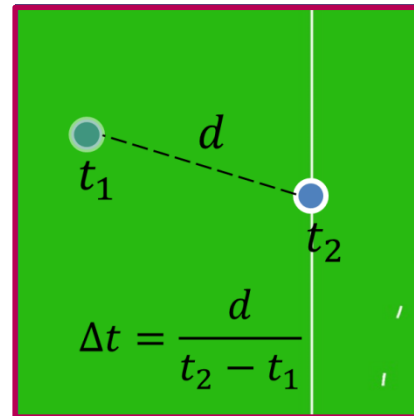
Area



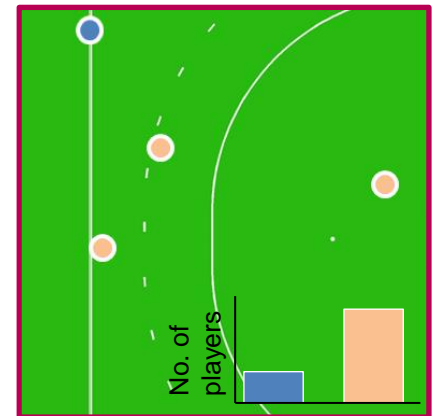
Duration



Speed



Context



Introduction

How many variables actually relate strongly to the output?

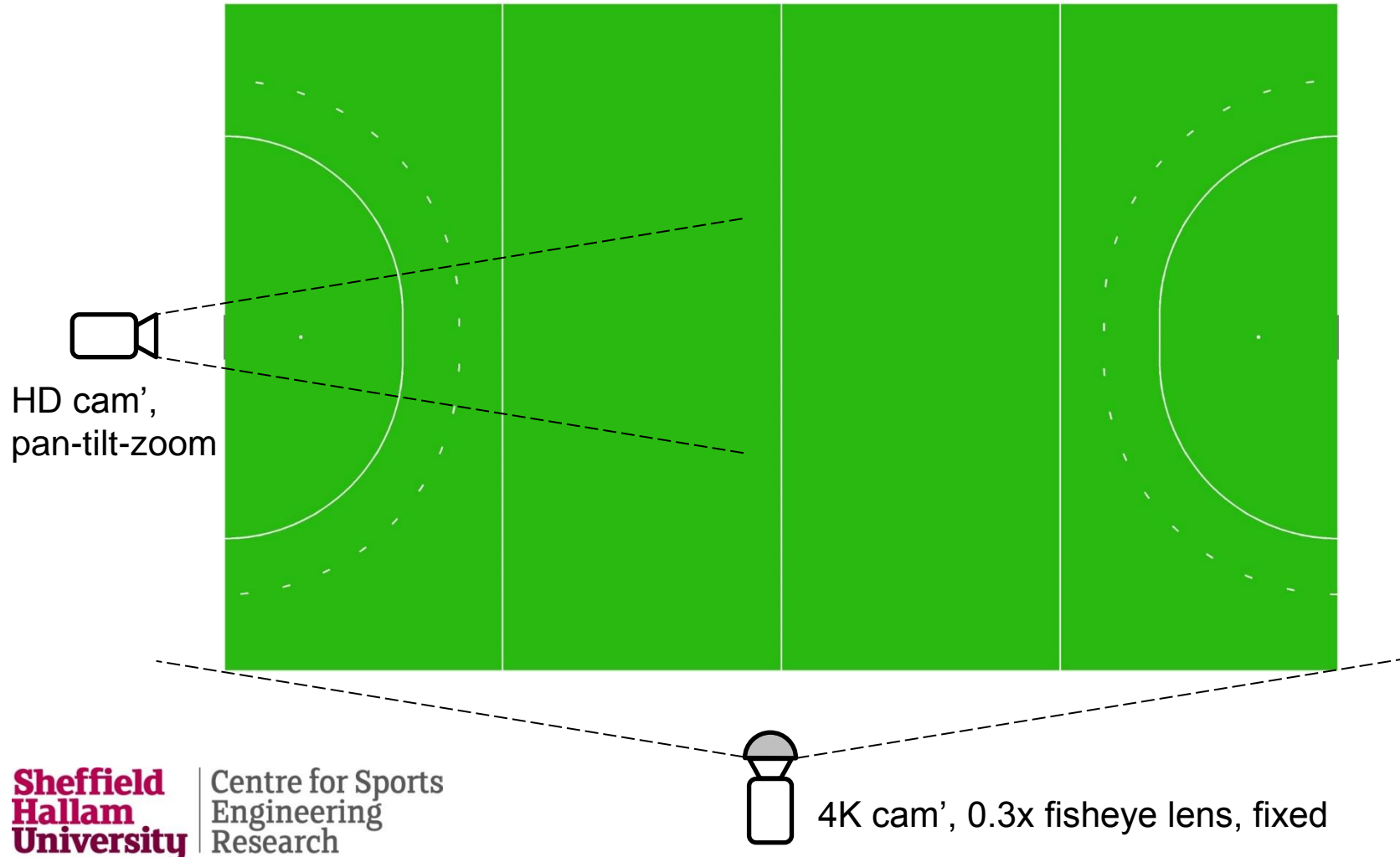
Introduction

Aim

To estimate the distribution of strong marginal effects of spatio-temporal metrics in field hockey plays.

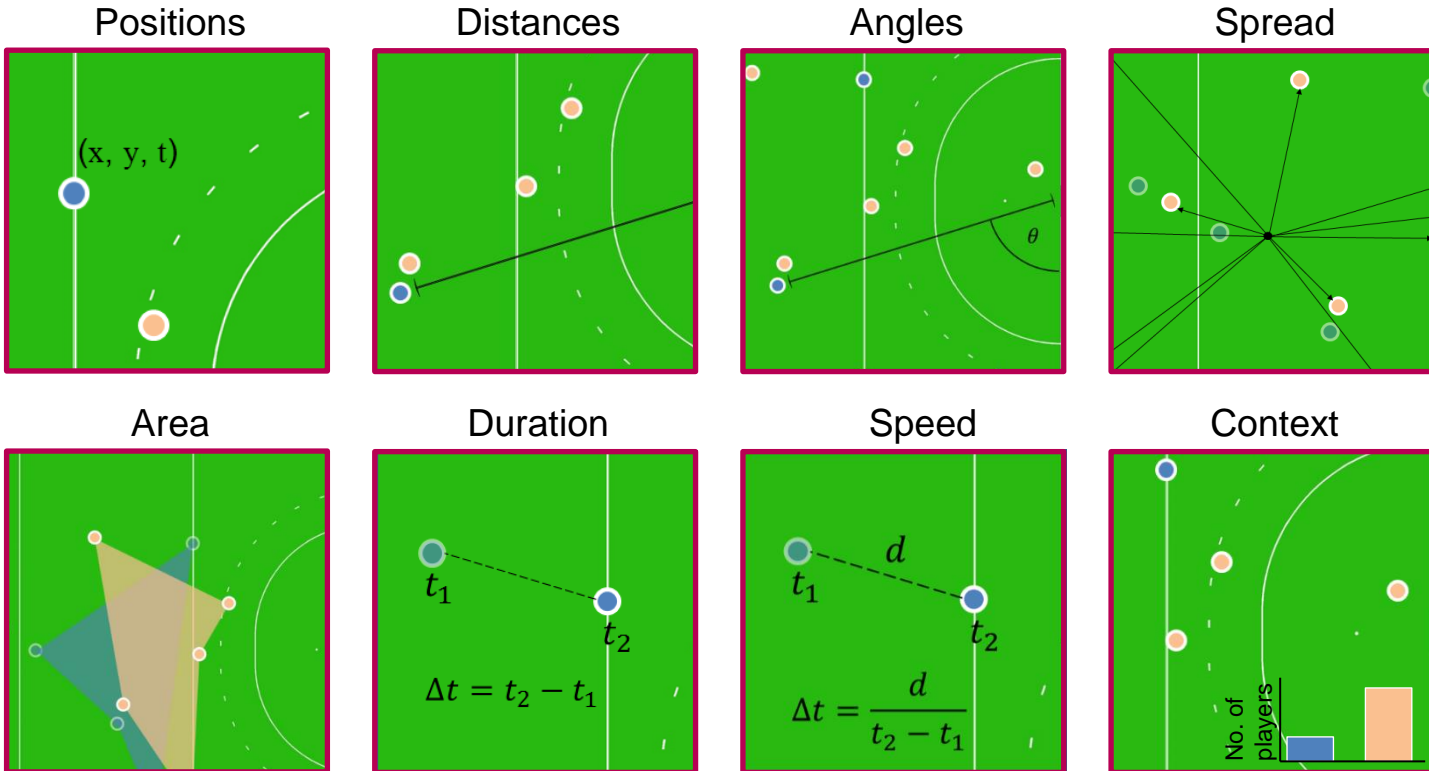
Method

Data collection



Method

Data processing



Method

Data analysis

Statistic	Measure of
Cramér's V	Association
Mutual Information	Mutual dependency
I-score	Influence / association

Method

Data analysis

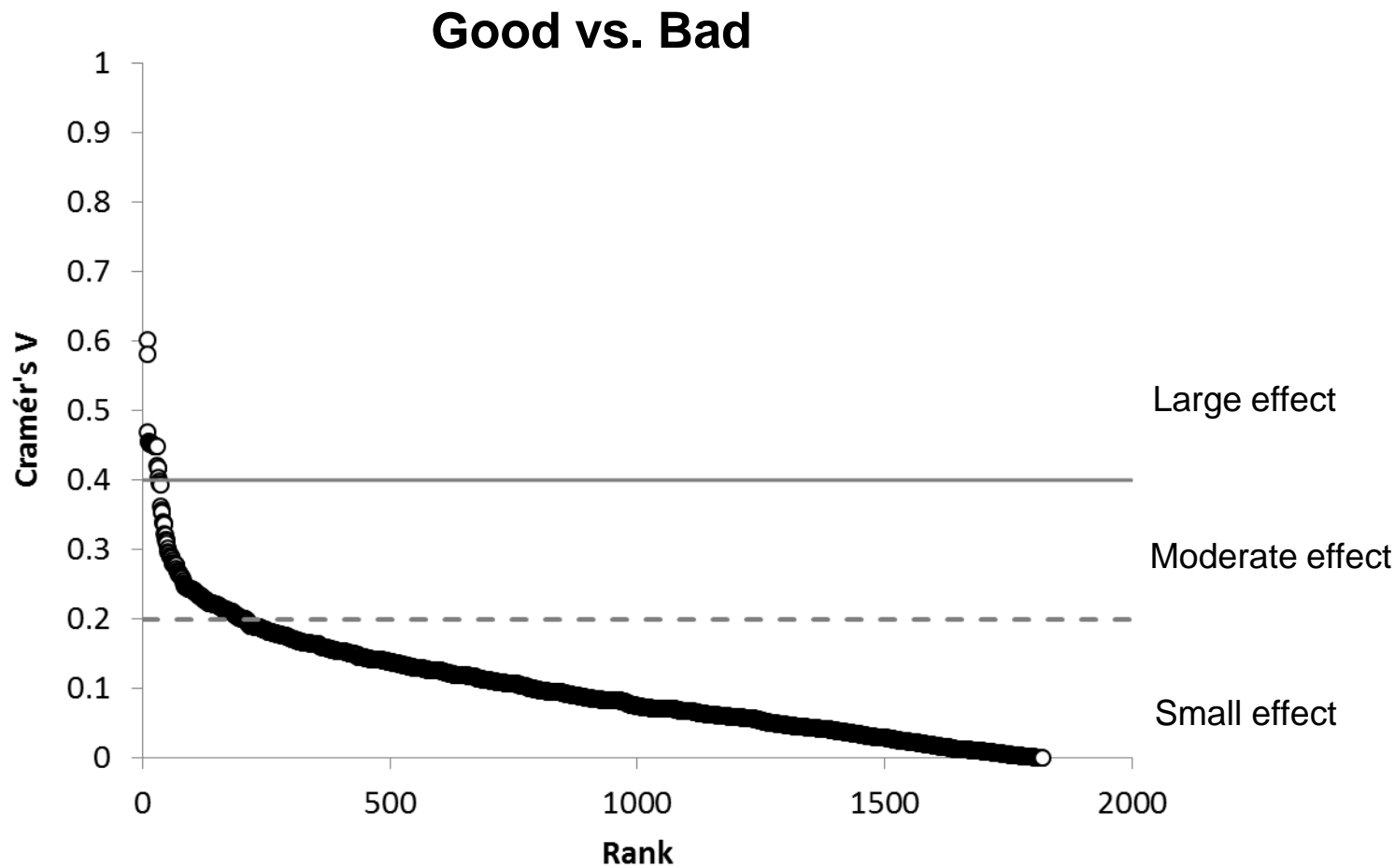
	Good vs. Bad	Good vs. OK	Ok vs. Bad
metric ₁	{V, M, I}	{V, M, I}	{V, M, I}
metric ₂	{V, M, I}	{V, M, I}	{V, M, I}
⋮	⋮	⋮	⋮
metric _{1,837}	{V, M, I}	{V, M, I}	{V, M, I}

V = Cramér's V

M = Mutual Information

I = I-score

Results



Conclusions

Reminder

Aim: To estimate the distribution of strong marginal effects of spatio-temporal metrics in field hockey plays.

1. Small subset of large effect metrics.
=> use univariate variable-selection methods.
2. Agreement between statistics.
=> confidence in apparent distribution.
3. Consistency across comparisons.
=> same methods can be applied for all comparisons.

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