



# Data Analysis Tools for UKIDSS

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17 Dec. 2007

# Outline

- Motivation
- Analysis Tools Available on WSA
- Live Demo
- Suggestions

# Motivation

## UKIDSS

Multi-TB database:

- ☺ Great potential;
- ☹ Impossible to download large portions of it through the internet;

Query is limited

Max (time, size) = (4800 sec, 15M/NumCols rows);

Data volumes are growing faster than standard network transfer rate.

## A solution

Server-side analysis tools:

- Preliminary estimates to identify data subsets of interest;
  - Results on common enquires;
- ⇒ Minimizes data transactions, user storage, effort of coding similar analyses;
- ⇒ Saves time and resources to both user and server!

# Analysis Tools Available on WSA

**Goal**: Explore high-dimensional data easily  
⇒ *user-friendly, flexible, fast, documented*

## ➤ Contour Plots (source tables)

**STATIC PLOTS**: *selection of attribute pairs for **all objects***

- *Sample of colour-colour & colour-magnitude diagrams;*
- Only unique & primary objects;
- Galaxy/Star class. prob. > 90%;
- Quality flags;

**PROS**: best resolution (all obj.);

**CONS**: not all combinations of attributes; pre-set conditions.

**DYNAMIC TOOL**: *random data subset with **all attributes***

- Random subsets (~200K obj/table)
- Direct access of object attributes (processing time ~ few seconds)
- Conditions on objects (class. probability, quality flags);
- Further options on output image;

**PROS**: user-selected attributes + some control on constraints;

**CONS**: subset (noisier).

## ➤ Queries On-Demand

*When user query time or resulting data set size >> limitations*

# Live Demo

*<http://surveys.roe.ac.uk/wsa/index.html>*

# Suggestions

Existing tools will be improved & new ones will be added.

*Planned / under consideration:*

- STILTS commands (non-graphical *TOPCAT*);
- Static plots as 3D interactive figures (via *s2plot*);
- Tools on cross-matched data with other surveys;
- Upload user files to include in contour plots;
- Sky coverage of UKIDSS vs. other surveys;
- Run user-supplied codes locally;
- Share common tools (e.g., clustering, photoz, etc.);
- General descriptive statistical tools...

***Your feedback would be the most helpful  
(please take advantage of the feedback form!)***