

A close-up photograph of a water bug, likely a water penny larva, walking on a water lily leaf. The bug is positioned in the upper left quadrant of the frame, with its legs extended. The leaf is a vibrant green, and the background is a soft, out-of-focus blue and white, suggesting a pond or stream. The text is overlaid on the lower right portion of the image.

Fenomeni di Trasporto Biologico: La Tensione Superficiale - Esercitazione

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Prova Sperimentale @ excel

- Contare n gocce che rompono la goccia su moneta
- Fotografie per angolo di contatto

	Gruppo 1	Gruppo 2	Gruppo 3	Gruppo 4	Gruppo 5	Gruppo 6
N acqua	23	35	40	26	35	
	25	20	25	31	22	
	31	21	24	14	23	
N acqua e sapone	14	16	10	16	18	
	12	15	13	10	25	
	13	20	12	17	14	

Calcolare medie, deviazioni standard, p-value

% carico l'immagine e la mostro a video

```
I = imread('moneta.jpg');
```

```
figure, imshow(I)
```

% faccio un crop manuale dell'immagine e la mostro a video

```
Ic= imcrop(I);
```

```
figure, imshow(Ic);
```

% prendo 4 punti sull'immagine: prima la base e poi l'altezza della goccia

% hp: qui approssimiamo il semidiametro del cerchio di contatto e il semidiametro di altezza

% ginput prende punti in ingresso finche non si da invio;

```
list = ginput;
```

% prendo le singole coordinate

```
s1 = list(1,:);s2 = list(2,:);l1 = list(3,:);l2 = list(4,:);
```

% calcolo le lunghezze nel piano con il teorema di pitagora

```
S = sqrt((s1(1)-s2(1))^2+(s1(2)-s2(2))^2)
```

```
L = sqrt((l1(1)-l2(1))^2+(l1(2)-l2(2))^2)
```

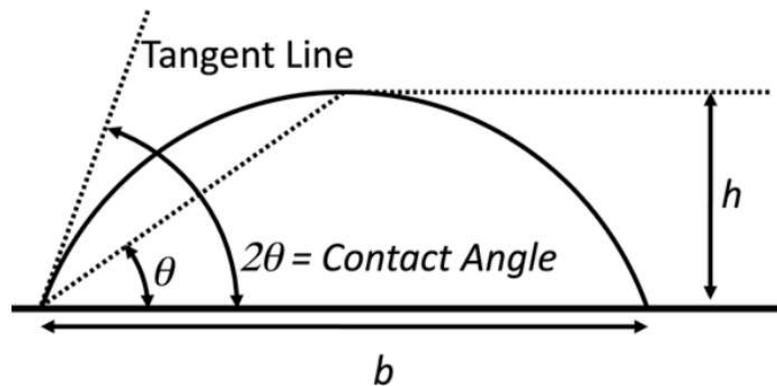
% calcolo l'angolo contatto _ half angle method

```
teta = pi-2*(atan(2*L/S));
```

% matlab lavora in radianti -> **trasformo in gradi**

```
teta_gradi = 180*teta/pi
```

Half Angle method @ MATLAB



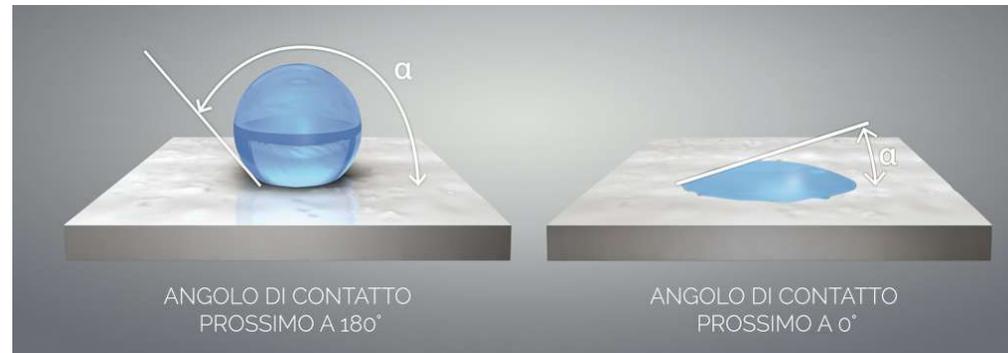
(ipotesi: cerchio perfetto)

$$\tan(\theta) = \frac{h}{b/2}$$

$$\theta = \text{atan}\left(\frac{2h}{b}\right)$$

$$\text{Contact angle} = 2 * \text{atan}\left(\frac{2h}{b}\right)$$

- *Dati gli angoli calcolati, la superficie risulta bagnabile o non bagnabile? (considerando sia acqua che acqua e sapone)*
- *Riportare i valori su excel*



Adesione < Coesione

$$90^\circ < \theta < 180^\circ$$

NON BAGNABILE

IDROFOBA

Adesione > Coesione

$$0 < \theta < 90^\circ$$

BAGNABILE

IDROFILA

@ H₂O

Paper and Review Structure

Title, Author,
Abstract,
Keywords

- Descriptive information that lets readers search for an article.

Abstract: recaps the work meaning and findings

Introduction

- What is the context for this project?
- How does it fit in with other research on the topic?
- *What is the research question?*

WHY?

Methods

- What did the author(s) do to answer the research question?

HOW?

Results

- What was the answer to the question?
- This is often shown in tables and figures.

WHAT?

Discussion/
Conclusion

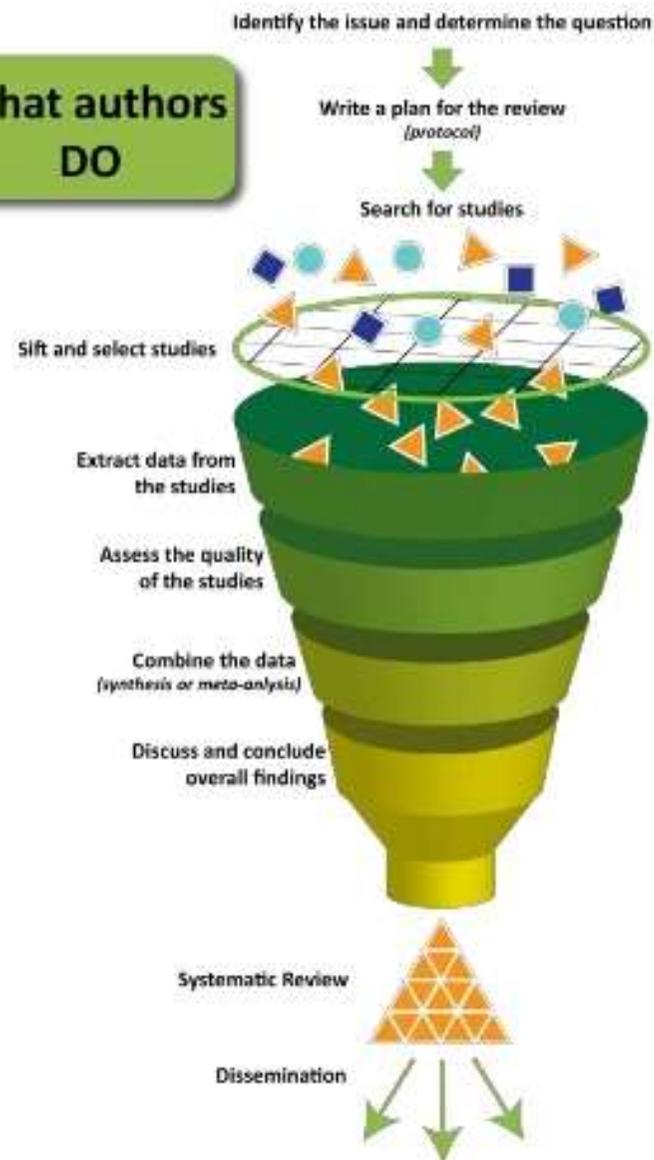
- What is the significance of this project?
- How does it fit in with what else is known about the topic?

SO WHAT?

References

- Materials the author(s) cited when writing this paper.

What authors
DO



What is in a systematic review



Bibliografia

Motori di ricerca:
Google scholar,
Pubmed, etc

The screenshot displays the Mendeley Desktop application window. The interface is divided into several sections:

- Top Bar:** Contains menu options (File, Edit, View, Tools, Help) and a search bar.
- Left Panel:** Shows the user's library structure, including 'Mendeley Literature Search', 'My Library' (with sub-items like All Documents, Recently Added, Favorites, Needs Review, My Publications, Unsorted, cs, Graphics, Other Science), and 'Groups' (Mendeley, Future of Science resources).
- Center Panel:** Titled 'Related Documents', it lists 10 recommendations based on documents in the 'Graphics' folder. The selected document is 'Depth Painting for Image-Based Rendering Applications' by Sing Bing Kang (1998).
- Right Panel:** Provides details for the selected document, including its type (Journal Article), authors (S. Kang), journal (Tech Rep CRL), year (1998), volume, issue, and pages (1-4). It also includes an abstract and tags.

Overlaid on the bottom left is a portion of a Microsoft Word ribbon, showing the 'References' tab with options like 'Insert Citation', 'Insert Bibliography', 'Refresh', and 'Mendeley Cite-O-Matic'. The Mendeley logo is also visible in the bottom right corner of the application window.