

The diagram illustrates two types of machine learning problems: forward and inverse. In the center is a box labeled 'ML'. To the left is a box for input parameters: 'Indenter (Velocity, Radius, Angle, Hitting location)'. To the right is a box for output data: 'Data set of crack pattern'. A top arrow labeled 'Forward problem' points from the input box to the output box. A bottom arrow labeled 'Inverse problem' points from the output box back to the input box.

Forward problem

ML

**Data set of
crack pattern**

**Indenter
(Velocity,
Radius, Angle,
Hitting location)**

Inverse problem