

Strategies for Realizing the Semantic Web

Enrico Motta

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How to make the semantic web a reality

- **Infrastructure**

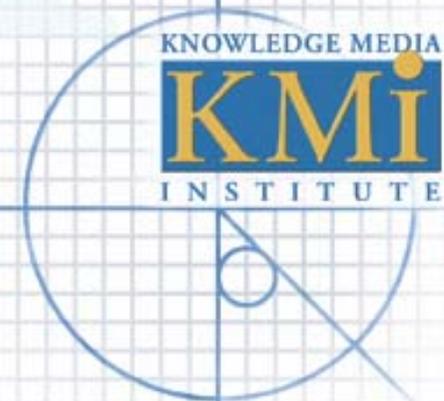
- Language
- Manual annotation tools (MnM)
- Automatic extraction of semantic content
 - (MnM, Melita, Armadillo, OntoMat)
- Tools for specification, use and debugging of Semantic Web Services
 - IRS-II

- **Basic Functionalities**

- Ontology-enhanced Search
 - Semantic Google
- Brokering and automatic composition of semantic web services

- **Killer Applications**

- E-commerce, personal agents, pervasive semantic web services, groupware, tele-presence, e-science



Something else

- **Build tools which help (or force) people to think semantically**
- **Browsing -> Semantic Browsing**

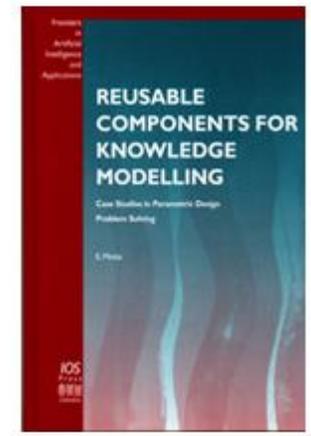


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Research Interests :

Ontologies, Problem Solving Methods, Knowledge Modelling, Knowledge Management

I am interested in applying [knowledge modelling](#) techniques to the web to deliver intelligent, knowledge-based services. For instance, in the [IBROW](#) project we are developing technologies which allow non-expert users to quickly develop prototypes of intelligent applications, by selecting and configuring reusable modelling components. In the [AKT](#) project, we are developing tools, which integrate web and knowledge technologies to support effective knowledge sharing in an organization. Other projects in which I am involved, include [ScholOnto](#) (augmenting digital libraries by means of conceptual representations of the ideas embedded in an academic publication) and [Alice](#) (using knowledge modelling technology to develop personalized shopping solutions on the web).



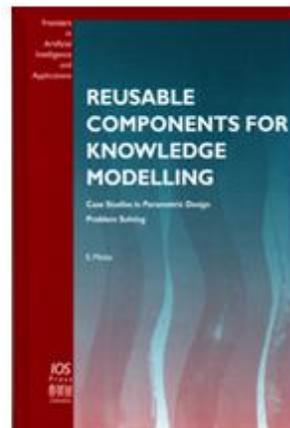
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- Person Details
- Works With
- Shares Interests With
- Related Stories
- Invite To
- Current Projects
- Projects Might Be Interested In
- Web Page

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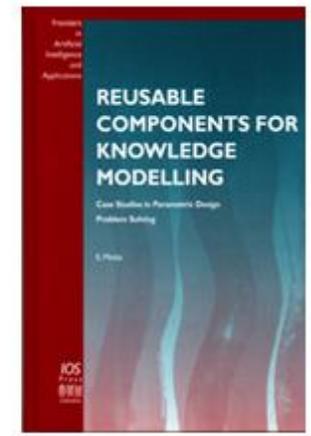


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- Project Details
- Project Research Areas
- Project Publications
- Related Stories
- Resulting Technologies
- Project Members
- Shares Research Areas With
- Interesting To
- Web Page

to the web to deliver [BROW](#) project we are quickly develop prototypes of [knowledge](#) modelling components. the web and knowledge organization. Other projects

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Selected Publications (1993 ->)



- Fensel, D. and Motta, E. (In Press). [Structured Development of Problem Solving Methods](#). To appear in IEEE Transactions on Knowledge and Data Engineering.
- Motta E., Buckingham-Shum, S. and Domingue, J. (2000). [Ontology-Driven Document Enrichment: Principles, Tools and Applications](#). International Journal of Human-Computer Studies, 52, 1071-1109.
- Motta, E. and Lu, W.(2000). [A Library of Components for Classification Problem Solving](#). 2000 Pacific Rim Knowledge Acquisition Workshop, Sydney, Australia, December 11-13, 2000.
- Buckingham-Shum, S., Motta E. and Domingue, J. (2000). [ScholOnto: An Ontology-Based Web Server for Research Documents and Discourse](#). International Journal on Digital Libraries. International Journal on Digital Libraries, 3 (3), pp. 237-248.
- Domingue, J. B. and Motta, E. (2000). [Planet-Onto: From News Publishing to Integrated Knowledge Management Support](#). IEEE Intelligent Systems, May/June 2000, pp. 26-32.
- Motta, E.(1999). [Reusable Components for Knowledge Modelling: Principles and Case Studies in Parametric Design](#). IOS Press, Amsterdam, 1999.
- Buckingham-Shum, S., Motta E. and Domingue, J. (1999). [Representing Scholarly Claims in Internet Digital Libraries: A Knowledge Modelling Approach](#). In Serge Abiteboul and Anne-Marie Vercoustre (eds), *Proceedings of the Third European Conference on Research and Advanced Technology for Digital Libraries*. Paris, France, September 22-24

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Magpie PED...
 John Domingue
 Enrico Motta
 Maria Vargas Vera
 Maruf Hasan
 Mattia Lanzoni
 Simon Buckingham Shum

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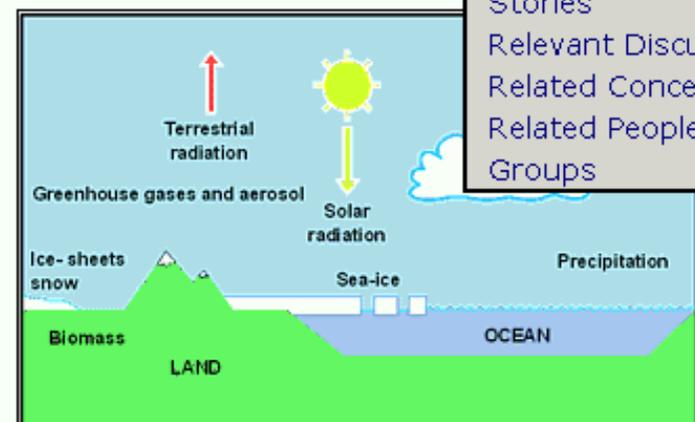
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Climate information

The climate system

Weather and climate have a profound influence on life on Earth. The **weather** is the fluctuating state of the **atmosphere** around us. The **climate** is the "average weather" (more rigorously, it is a statistical description of weather, including variations over long periods of time); **climate** involves the other components of the **climate system**.

Components of the climate system



- Explain
- Show In Model
- Relevant News Stories
- Relevant Discussions
- Related Concepts
- Related People Or Groups

atmosphere: its circulation, the heat radiation and light (solar radiation) which pass through it, and the processes which go on in it, such as the formation of clouds and the **atmospheric reactions** that determine the concentrations of some of its important constituents, such as methane and **ozone**.

The ocean: There is a constant exchange of heat, momentum and water between ocean and the **atmosphere**. The ocean acts as a heat sink to delay **climate change**. In addition, ocean currents transport large amounts of heat and water around the world.

- About
- Climate
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- Visiting Scientist programme
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- Climate centres
- Intergovernmental Panel on Climate Change
- Climate data for impacts research
- UK Climate Impacts

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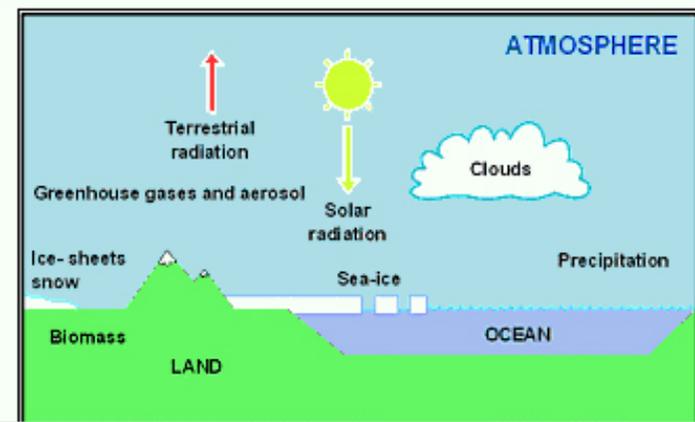
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Climate information

The climate system

Weather and climate have a profound influence on the atmosphere around us. The climate is the "average" description of weather, including variability and extremes. Other components of the climate system in addition to the atmosphere are the land, the ocean, and the cryosphere.

Components of the climate system



http://plainmoor.open...
Explanation of Climate
 The atmospheric conditions for a long period of time, and generally refers to the normal or mean course of the weather. Includes the future expectation of long term weather, in the order of weeks, months or years ahead.

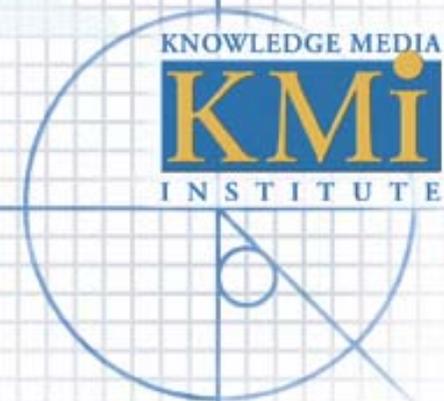
The **atmosphere**: its circulation, the heat (terrestrial radiation) and light (solar radiation) which pass through it, and the processes which go on in it, such as the formation of clouds and the **atmospheric chemical reactions** that determine the concentrations of some of its important constituents, such as methane and ozone.

The **ocean**: There is a constant exchange of heat, momentum and water between ocean and the atmosphere. The ocean acts as a heat sink to delay climate change. In addition, ocean currents transport large amounts of heat and water around the world.

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- [Intergovernmental Panel on Climate Change](#)
- [Climate data for impacts research](#)
- [UK Climate Impacts](#)

Key features of approach

- **New way to browse and interpret web content**
- **New framework for constructing web sites**
- **Ubiquitous integration of semantic web services**
- **Can make use of both on-the-fly markup and pre-existing annotations**
- **Semantic functionalities packaged as a no-extra-cost, no-extra-cognitive-overhead for users cost for users**



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