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### **Introducing Cloud Computing and OpenStack**

By “Cloud” we normally mean a set of technologies, that both the private and public sectors are using since quite some time to self-provision IT resources. The providers of these resources, used to handle data, applications, databases and else, can also be private or public. The benefits of the Cloud as an efficient and unifying method to provision resources are indeed what drives its success.

This contribution will start from this definition of Cloud and show the potentiality and limits of Cloud computing and storage for scientific endeavors in several fields. Some details of how Clouds can be concretely implemented, taking the popular OpenStack framework as an example, will be given. It will then be briefly shown what are the perspectives of Clouds for science in Europe, with highlights of the European Open Science Cloud and of the European Data Infrastructure currently under discussion or implementation.