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ROOT.NET: Using ROOT from .NET languages like C# and F#

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ROOT.NET provides an interface between Microsoft's Common Language Runtime (CLR) and .NET technology and the ubiquitous particle physics analysis tool, ROOT. ROOT.NET automatically generates a series of efficient wrappers around the ROOT API. Unlike pyROOT, these wrappers are statically typed and so are highly efficient as compared to the Python wrappers. The connection to .NET means that one gains access to the full series of languages developed for the CLR including functional languages like F# (based on OCaml). Many features that make ROOT objects work well in the .NET world are added (properties, IEnumerable interface, LINQ compatibility, etc.). Dynamic languages based on the CLR can be used as well, of course (Python, for example). Additionally it is now possible to access ROOT objects that are unknown to the translation tool. This poster will describe the techniques used to effect this translation, along with performance comparisons, and examples. All described source code is posted on the open source site Codeplex.

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