Re: Understanding Serre duality [Riemann surface context]

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On 2 abr, 05:15, jane <jane1...@xxxxxxxxxx> wrote:

> On Apr 1, 11:47 am, jane <jane1...@xxxxxxxxxx> wrote:
>
> > I would be grateful if someone could explain me the
>
> following:
>
> > Let X be a Riemann surface, Q(X) = the space of
>
> mremorphic quadratic differentials on X with only
> simple poles.
>
> > Theta − sheaf of holomorphic vector fields on X.
>
> > How exactly one can understand that
>
> > H^1(X, Theta)* isomorphic Q(x)
>
> > I know this should be a consequence of the Serre
>
> duality, but i don't see how exactly. Let me state
> the Serre duality theorem i know:
>
> > H^1(X, O)* isomorphic to H^0(X, Omega),

where O is the sheaf of holomorphic functions on X

and Omega is the sheaf of meromorphic 1−forms on X.

Thanks a lot in advance,

There is a slightly more general version, which
states that

H^1(X, F)* = H^0(X, F* tensor Omega)

Thanks a lot for the answer. So you suggest take F to be the sheaf of holomorphic vector fields on X.
What does the notation F* tensor mean, what you denote by F* (pullback under what ?)

That's just the dual sheaf.

−− m
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