

**Coupling and Dispersion Correction in ELETTRA,**  
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spurious vertical dispersion is one of the most  
important operations for the beam quality control in  
ELETTRA which is running as a new generation low  
emittance light source. While the presence of  
combined function dipoles allows a moderately focused  
optics with a furthermore reduced horizontal emittance,  
it enhances simultaneously the sensitivity of the  
spurious vertical dispersion against orbit displacements.  
The spurious vertical dispersion is estimated to be the  
major source of the emittance coupling in ELETTRA,  
which in turn becomes a key parameter for the lifetime  
as it is dominated by the Touschek scattering. The  
correction is performed with steerer magnets used for  
the orbit correction, by elaborating on the sensitivity  
matrix for the dispersion which takes into account the  
feed down effects of the orbit through sextupoles and  
thick quadrupoles. The obtained matrix is applied in  
ways that also seek to keep the orbit from being  
distorted. Details on the developed schemes, the  
degree of corrections achieved, as well as on the  
dependence of related machine parameters on the  
correction are described.