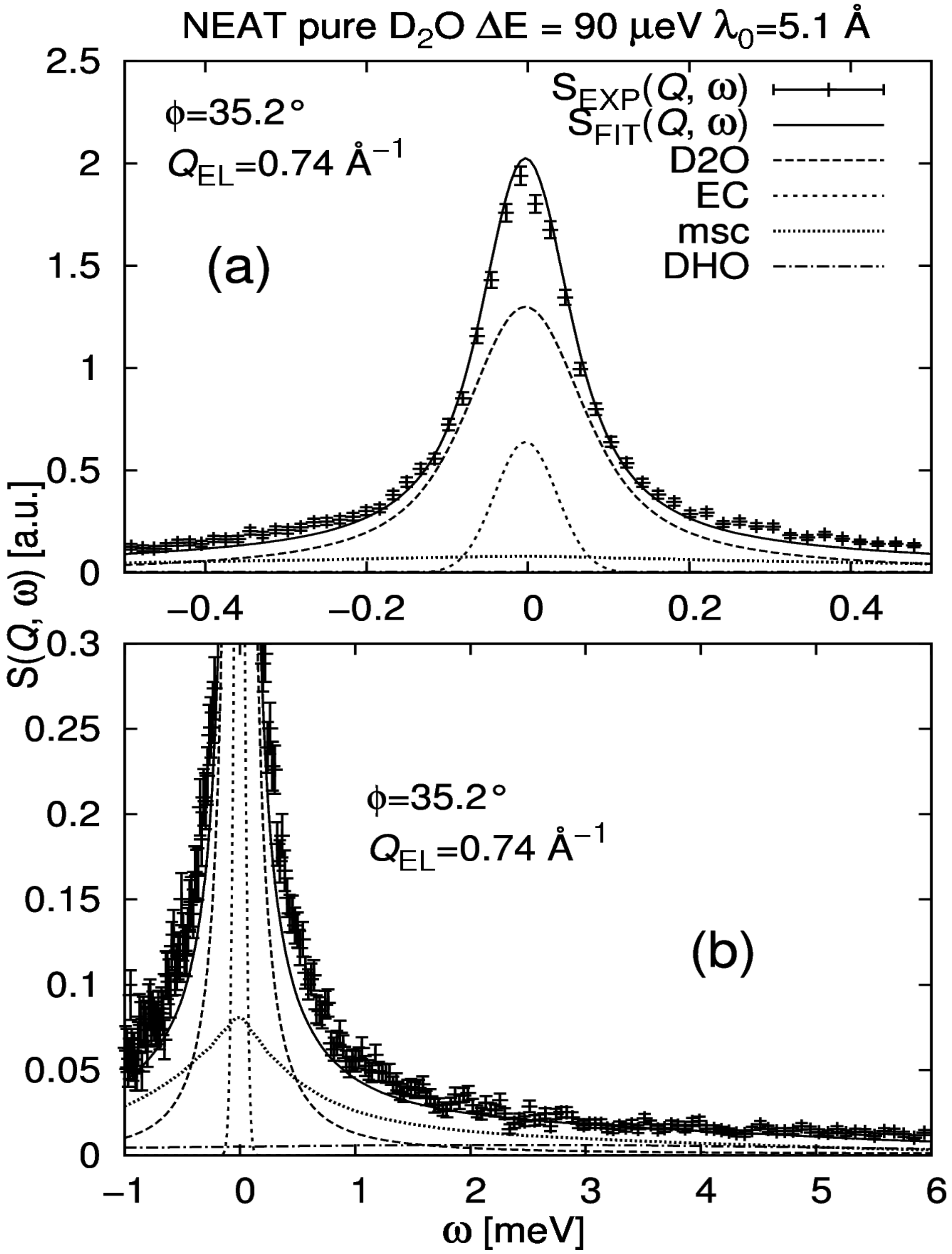

Figure A1 **Fit of {NEAT(4)} D_2O spectra, λ_0=5.1 Å, ΔE=90 μeV, low *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; “D2O” and “EC” are the QENS components due to D_2O and the sample container scattering, respectively. “msc” is the multiple scattering and “DHO” represents the inelastic scattering by D_2O.

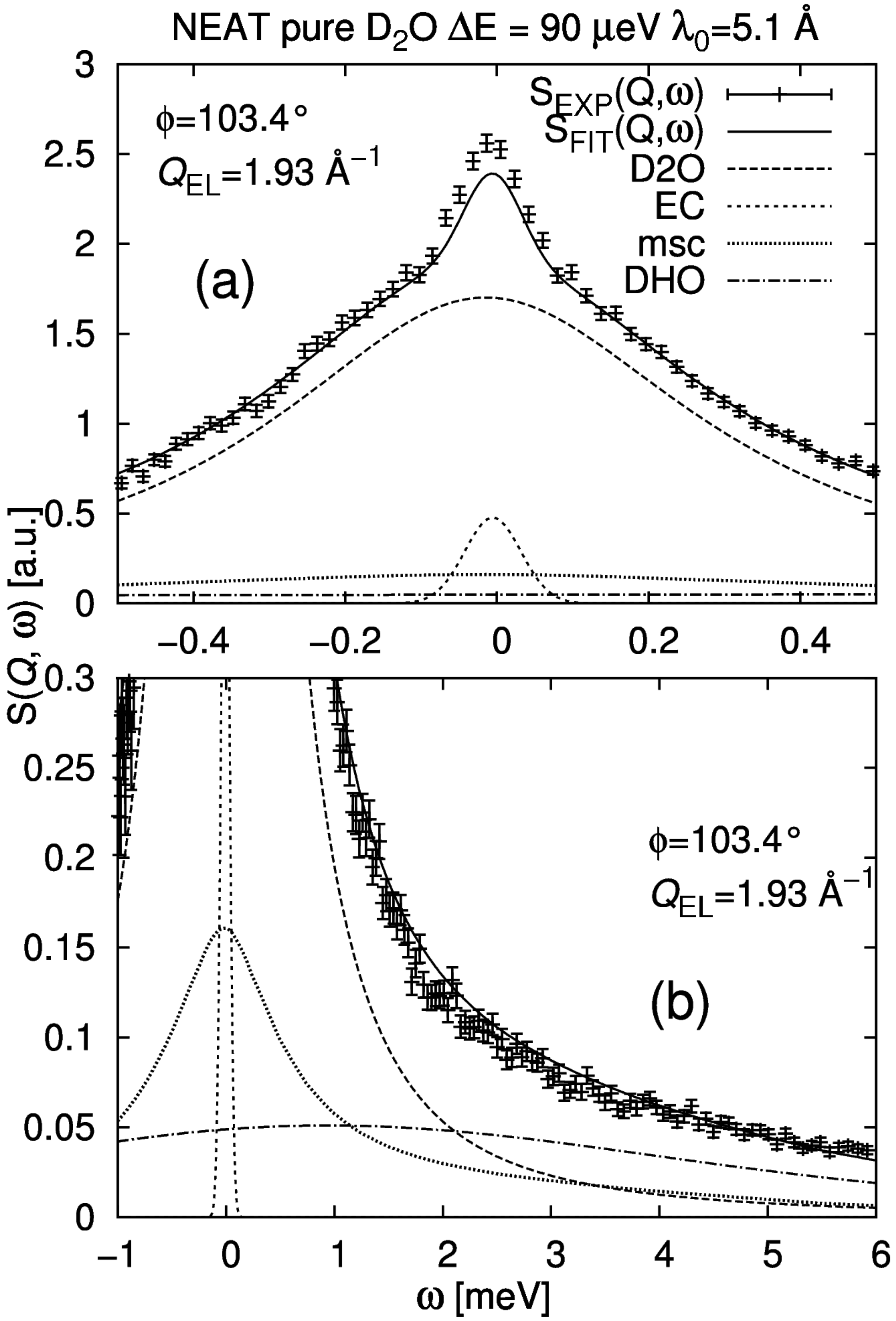

Figure A2 **Fit of {NEAT(4)} D_2O spectra, λ_0=5.1 Å, ΔE=90 µeV, high *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O" and "EC" are the QENS components due to D_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by D_2O.

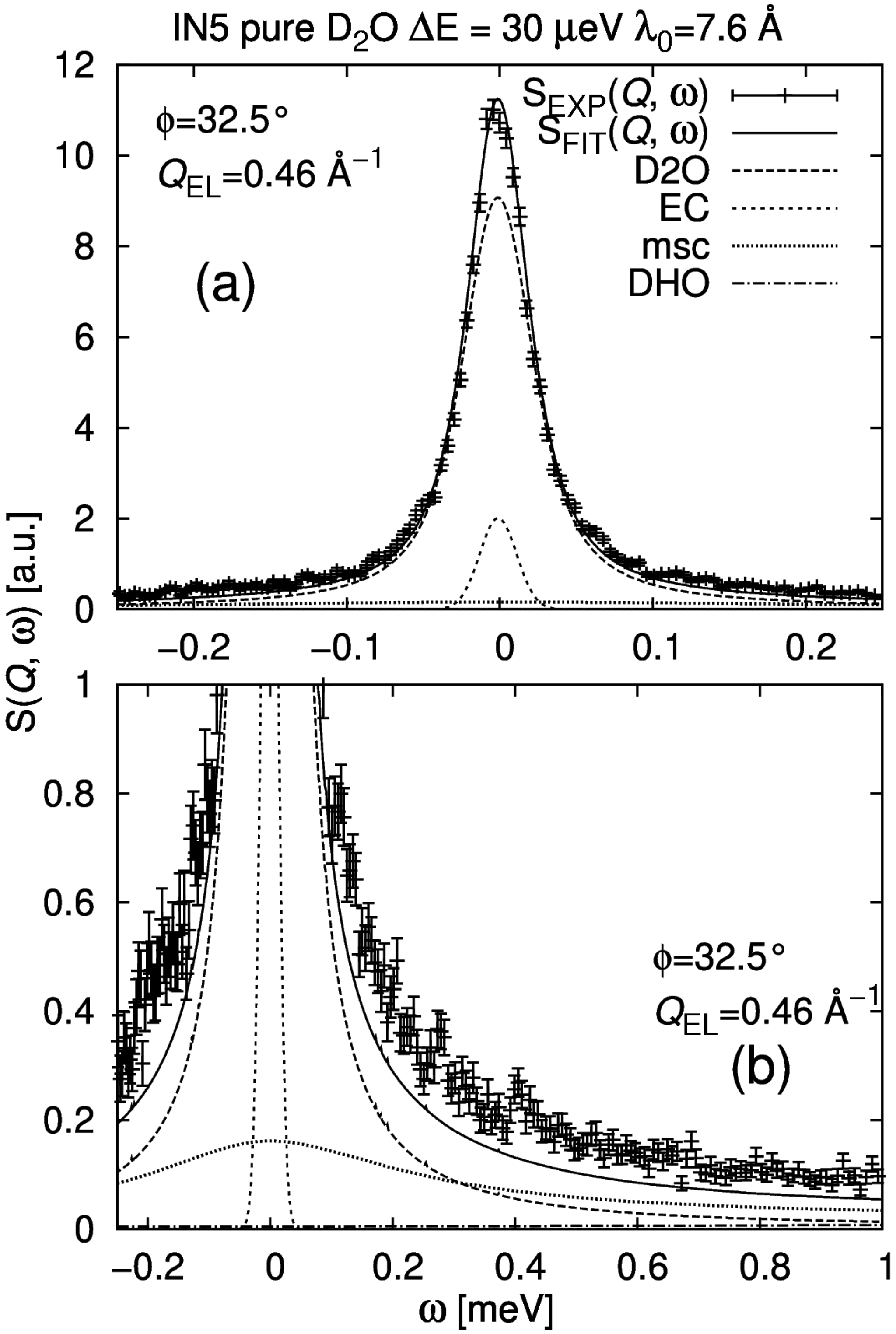

Figure A3 **Fit of {IN5(1)} D_2O spectra, λ_0=7.6 Å, ΔE=30 μeV, low *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; “D2O” and “EC” are the QENS components due to D_2O and the sample container scattering, respectively. “msc” is the multiple scattering and “DHO” represents the inelastic scattering by D_2O.

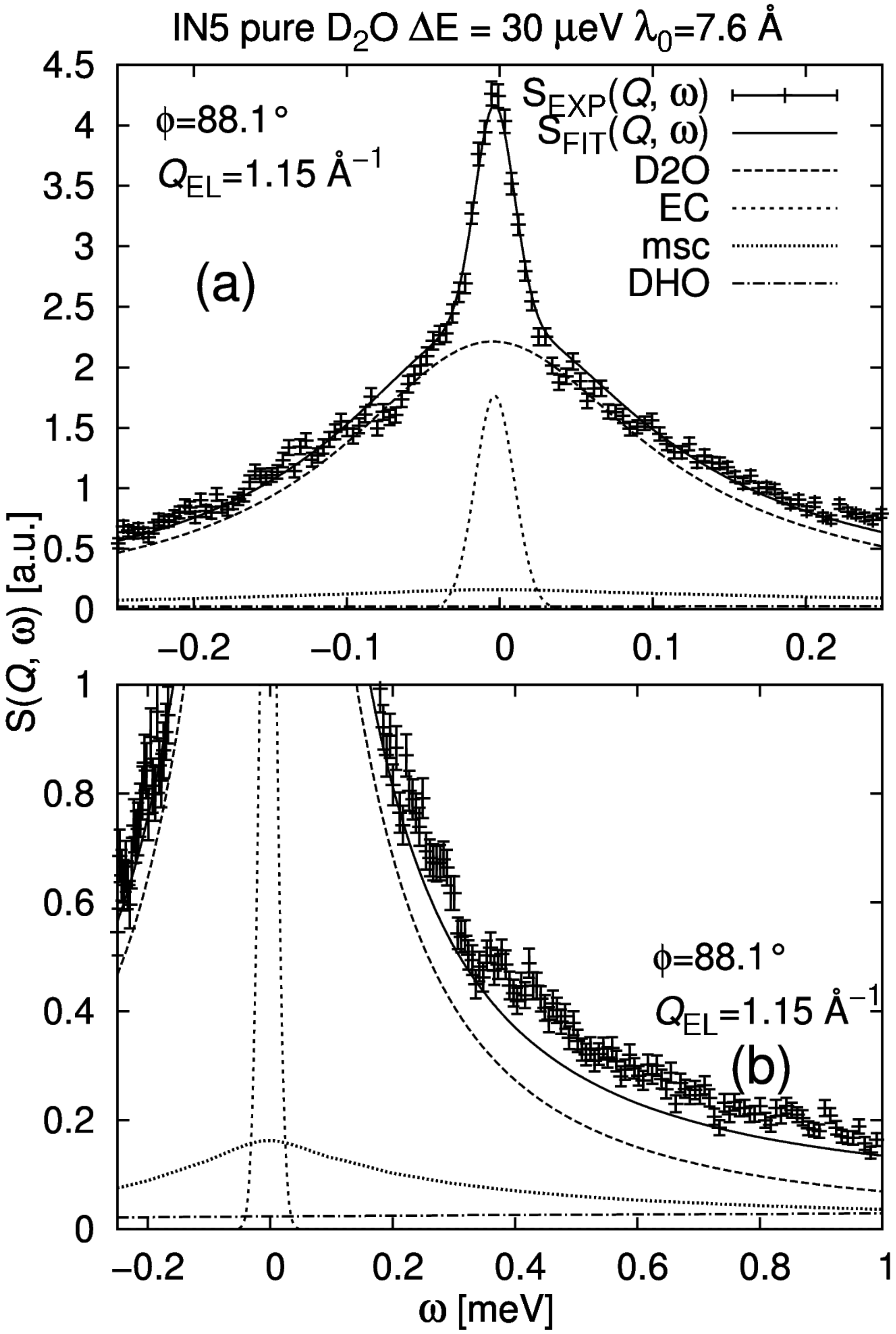

Figure A4 **Fit of {IN5(1)} D_2O spectra, λ_0=7.6 Å, ΔE=30 μeV, high *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O" and "EC" are the QENS components due to D_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by D_2O.

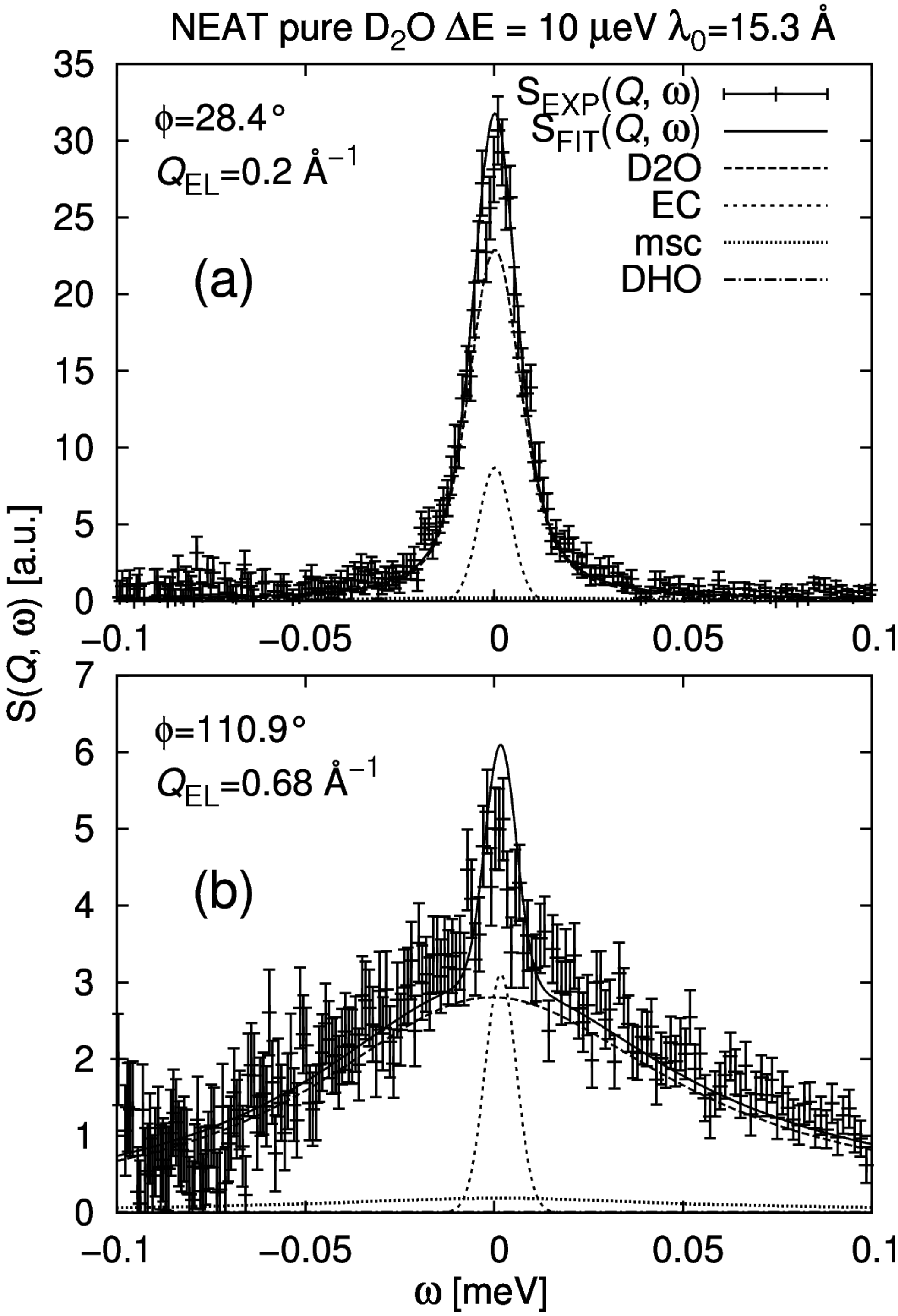

Figure A5 **Fit of {NEAT(3)} D_2O spectra, λ_0=15.3 Å, ΔE=10 μeV.** The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O" and "EC" are the QENS components due to D_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by D_2O.

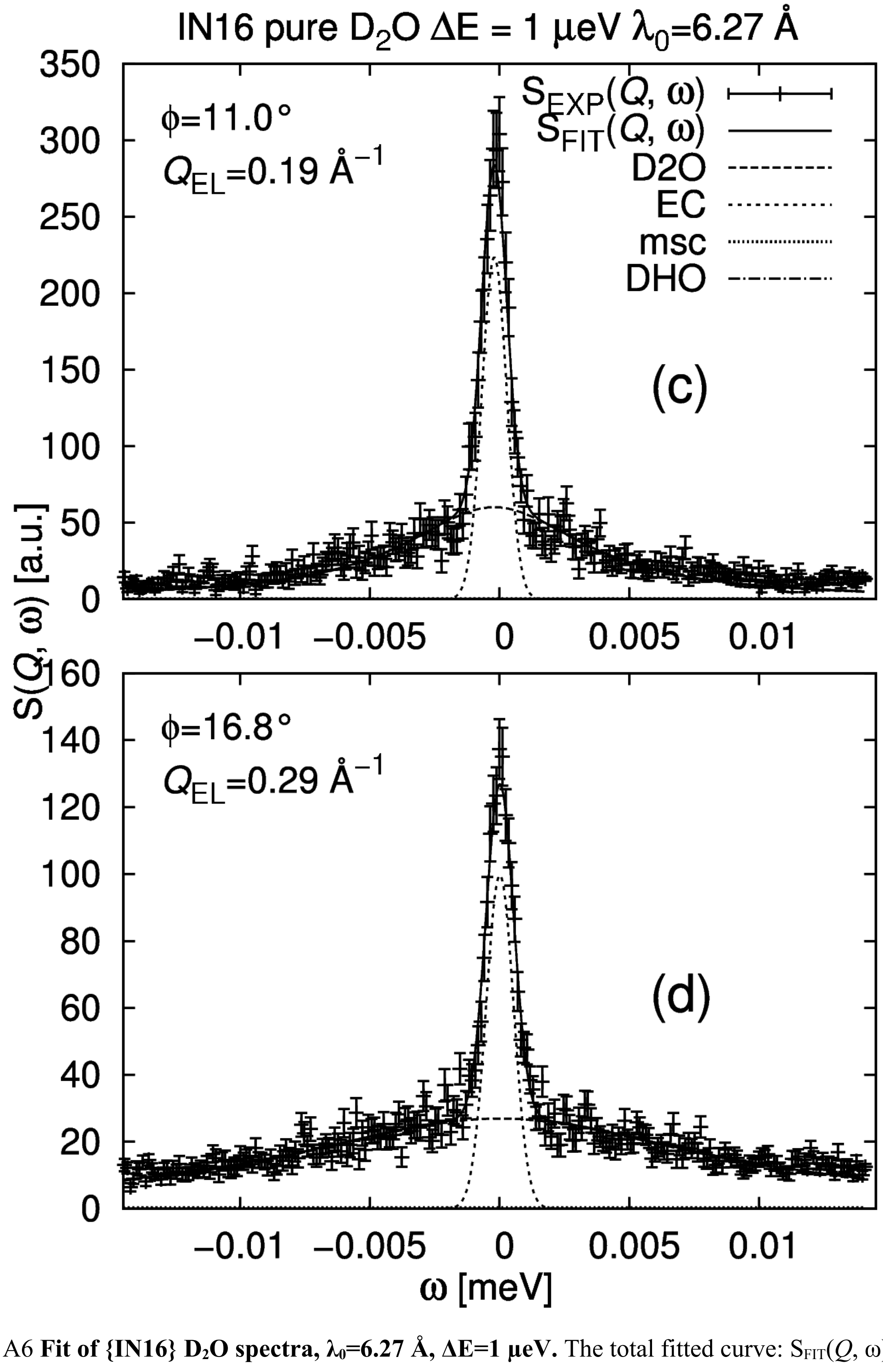

Figure A6 **Fit of {IN16} D_2O spectra, λ_0=6.27 Å, ΔE=1 μeV.** The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O" and "EC" are the QENS components due to D_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by D_2O.

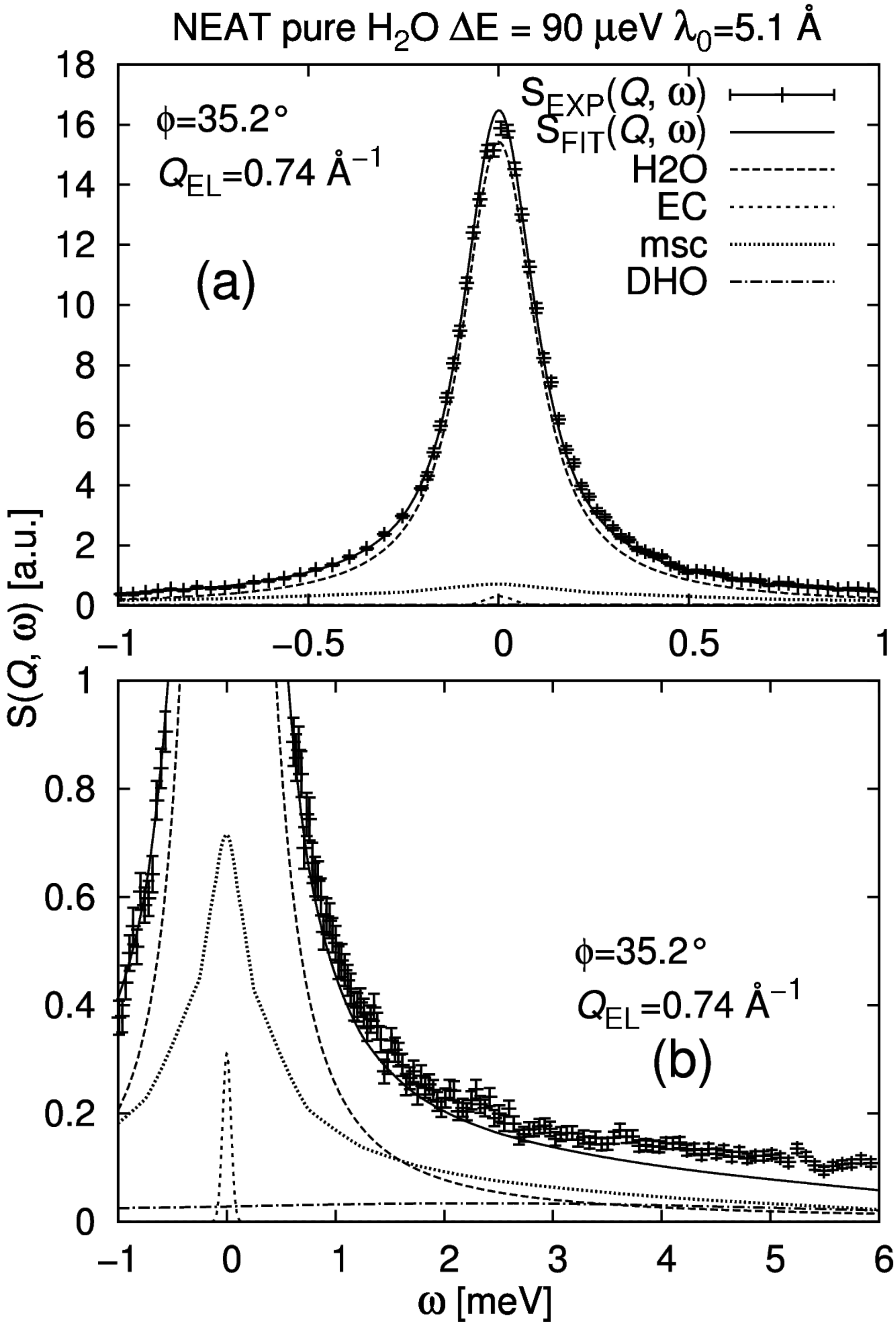

Figure A7 **Fit of {NEAT(2)} H_2O spectra, λ_0=5.1 Å, ΔE=90 μeV, low *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; "H2O" and "EC" are the QENS components due to H_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by H_2O.

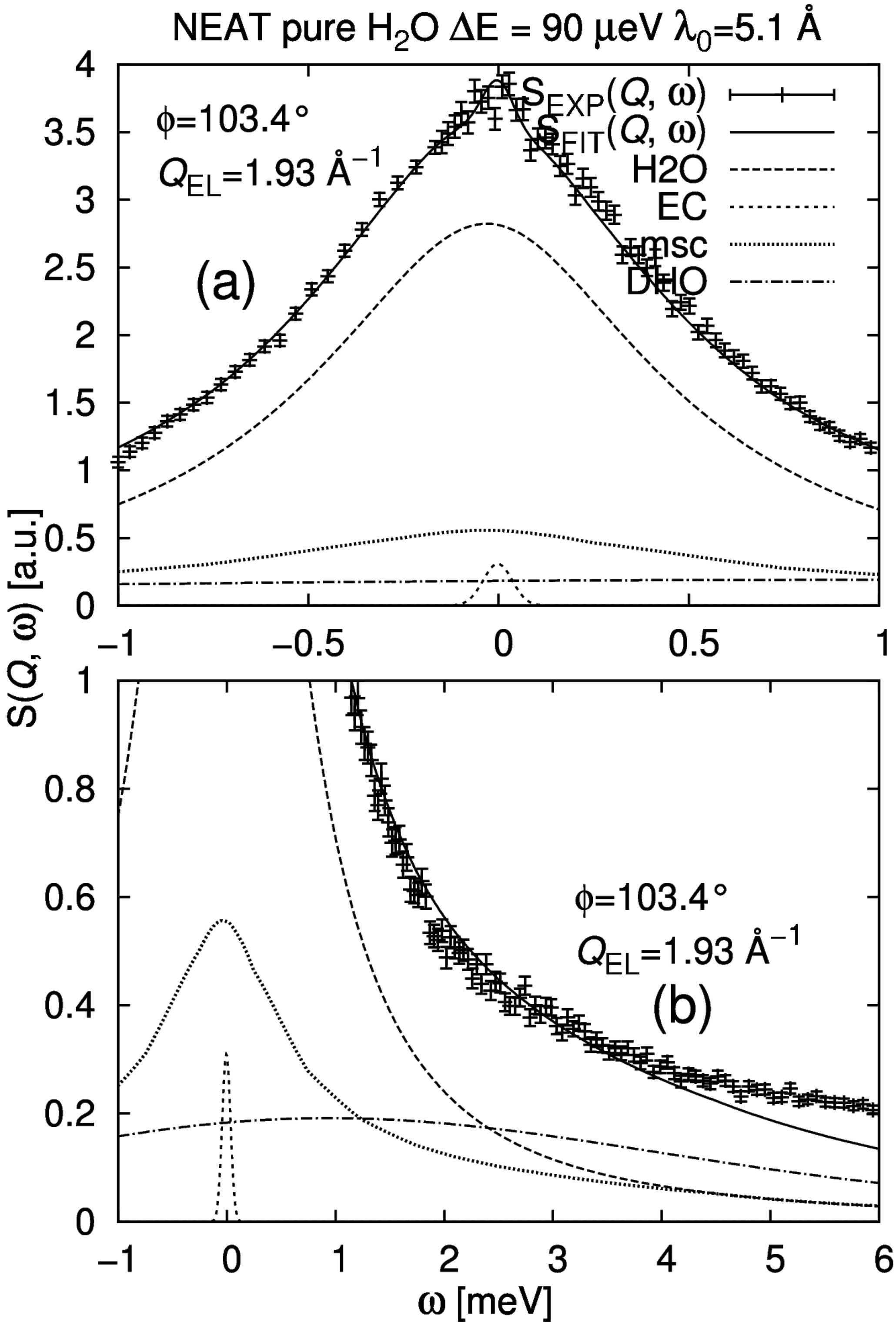

Figure A8 **Fit of {NEAT(2)} H_2O spectra, λ_0=5.1 Å, ΔE=90 μeV, high *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; "H2O" and "EC" are the QENS components due to H_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by H_2O.

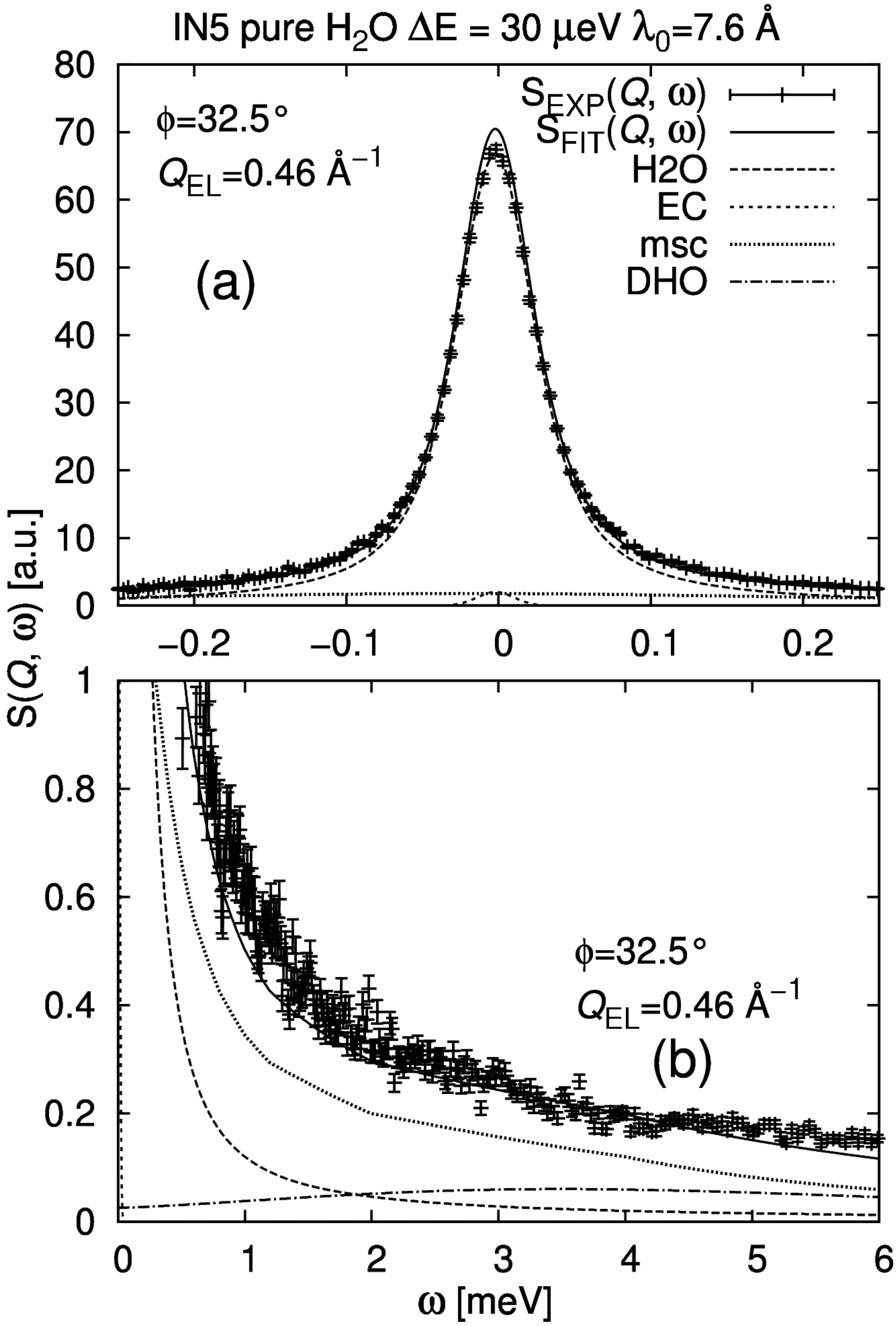

Figure A9 **Fit of {IN5(2)} H_2O spectra, λ_0=7.6 Å, ΔE=30 μeV, low *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; “H2O” and “EC” are the QENS components due to H_2O and the sample container scattering, respectively. “msc” is the multiple scattering and “DHO” represents the inelastic scattering by H_2O.

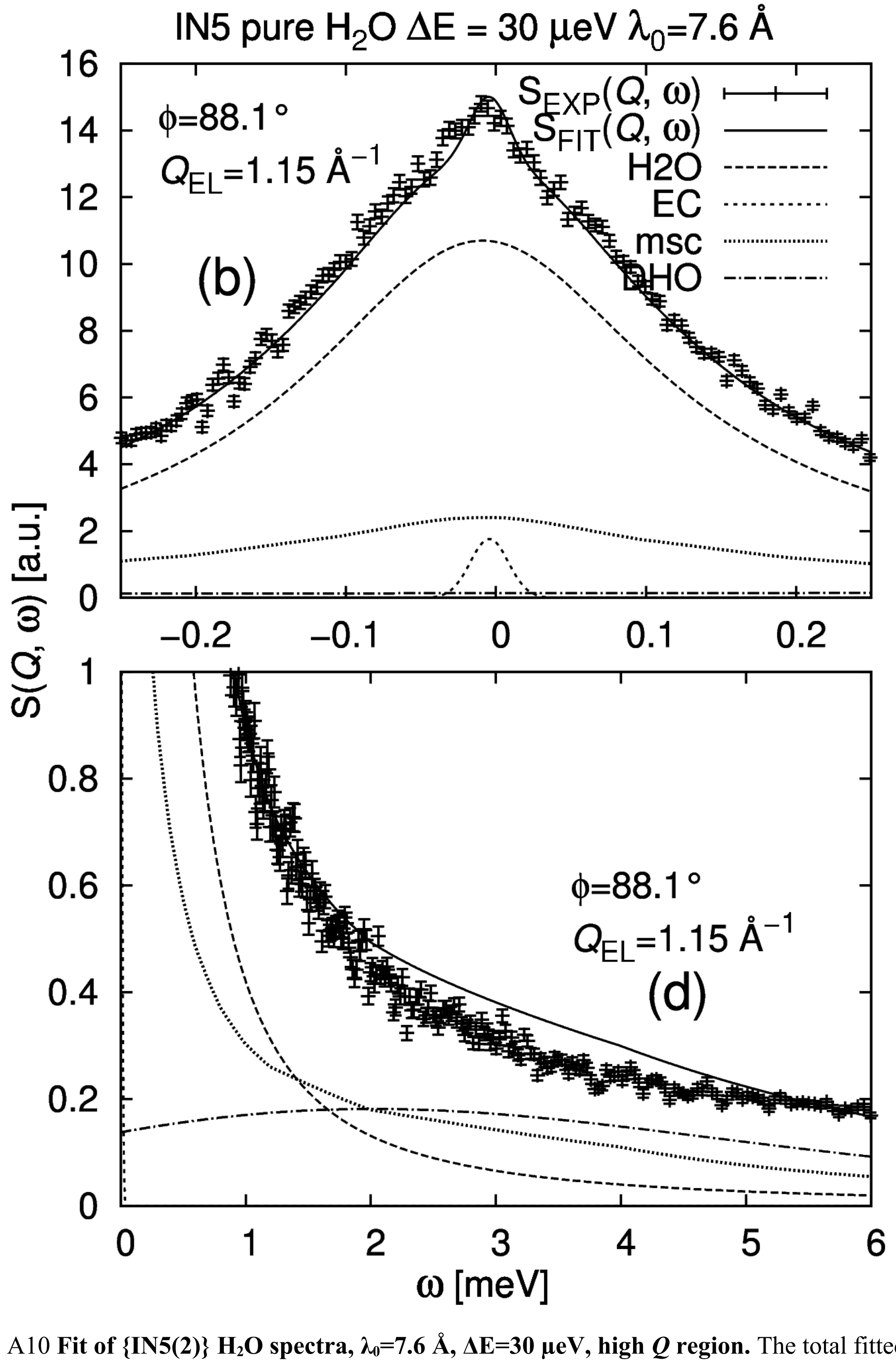

Figure A10 **Fit of {IN5(2)} H_2O spectra, λ_0=7.6 Å, ΔE=30 μeV, high *Q* region.** The total fitted curve: $S_{FIT}(Q, \omega)$; "H2O" and "EC" are the QENS components due to H_2O and the sample container scattering, respectively. "msc" is the multiple scattering and "DHO" represents the inelastic scattering by H_2O.

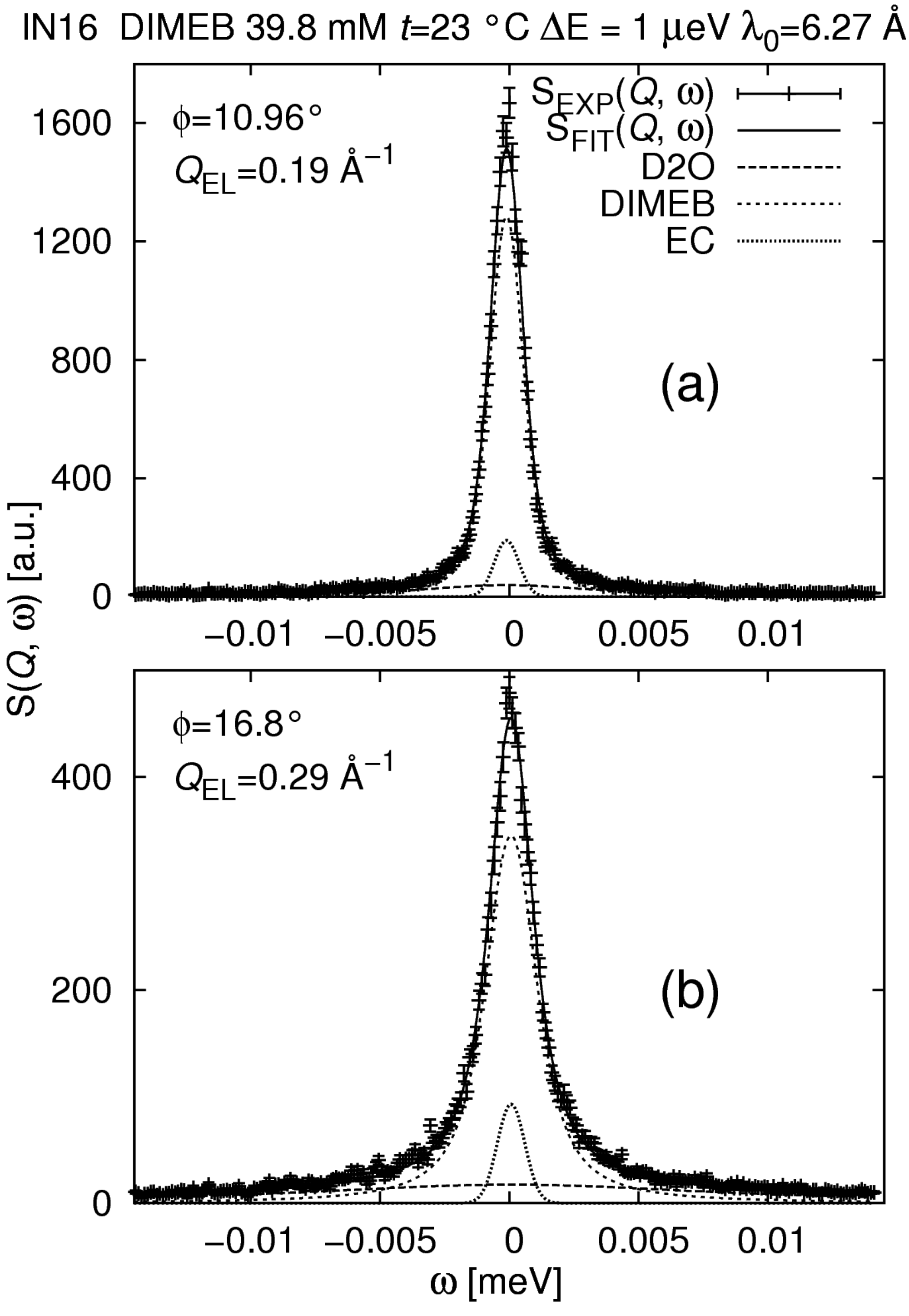

Figure B1 **Examples of the fit of the "standard solute model" to {IN16} spectra of DIMEB solutions in heavy water, 39.8 mM, φ=10.96° and 16.80°.** The spectra for two scattering angles, 10.96° and 16.80°, are shown; $D_{r\,SOL}$ was fixed to zero. The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O", "DIMEB" and "EC" are the QENS components due to D_2O, DIMEB and the sample container scattering, respectively.

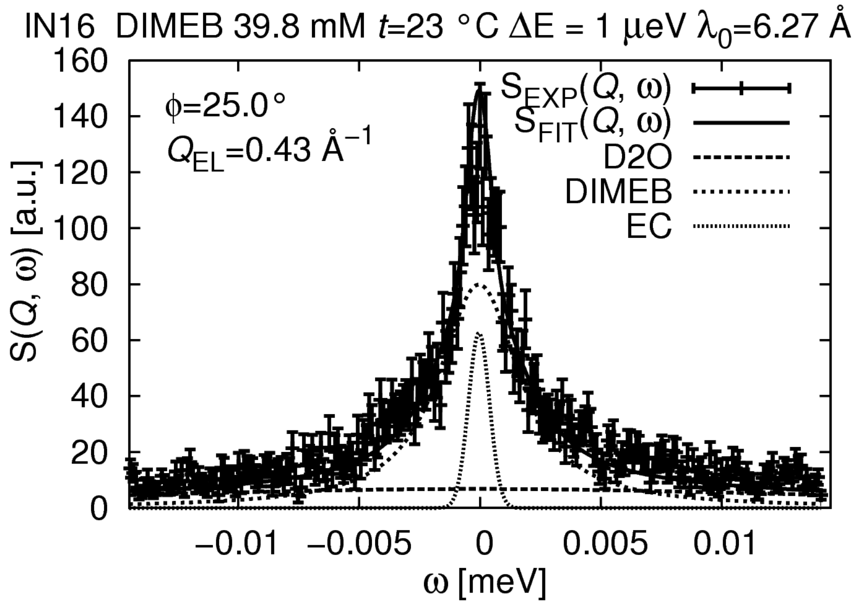

Figure B2 **Example of the fit of the "standard solute model" to {IN16} spectra of DIMEB solutions in heavy water, 39.8 mM, φ=25.0°.** The spectrum for the scattering angle 25.0° is shown; $D_{r\,SOL}$ was fixed to zero. Note: because of the fast increase of the spectral broadening with Q, the statistical accuracy is getting poorer with an increase in the scattering angle. The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O", "DIMEB" and "EC" are the QENS components due to D_2O, DIMEB and the sample container scattering, respectively.

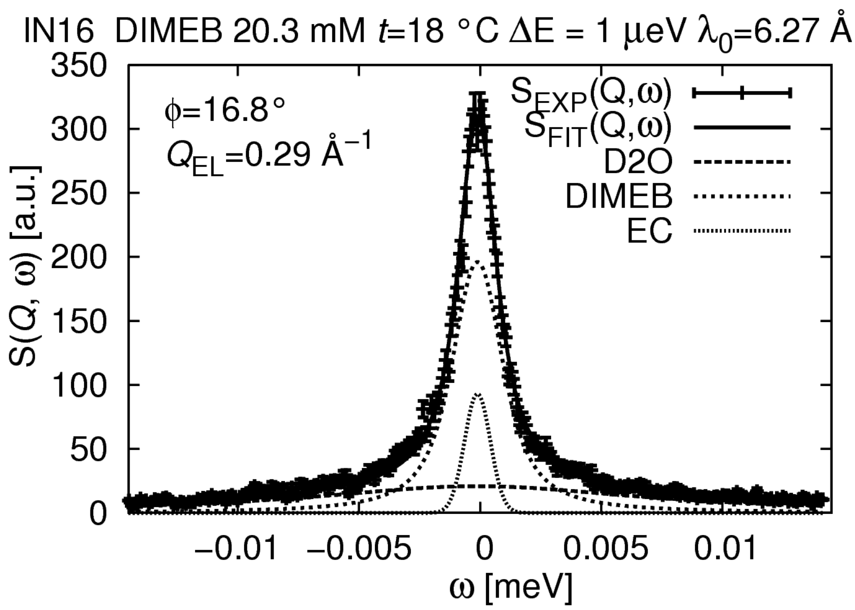

Figure B3 **Example of the fit of the "standard solute model" to {IN16} spectra of DIMEB solutions in heavy water, 20.3 mM, φ=16.8°.** The spectrum for the scattering angle 16.8° is shown; $D_{r\,SOL}$ was fixed to zero. Concentration of DIMEB here: 20.3 mM. The total fitted curve: $S_{FIT}(Q, \omega)$; "D2O", "DIMEB" and "EC" are the QENS components due to D_2O, DIMEB and the sample container scattering, respectively.

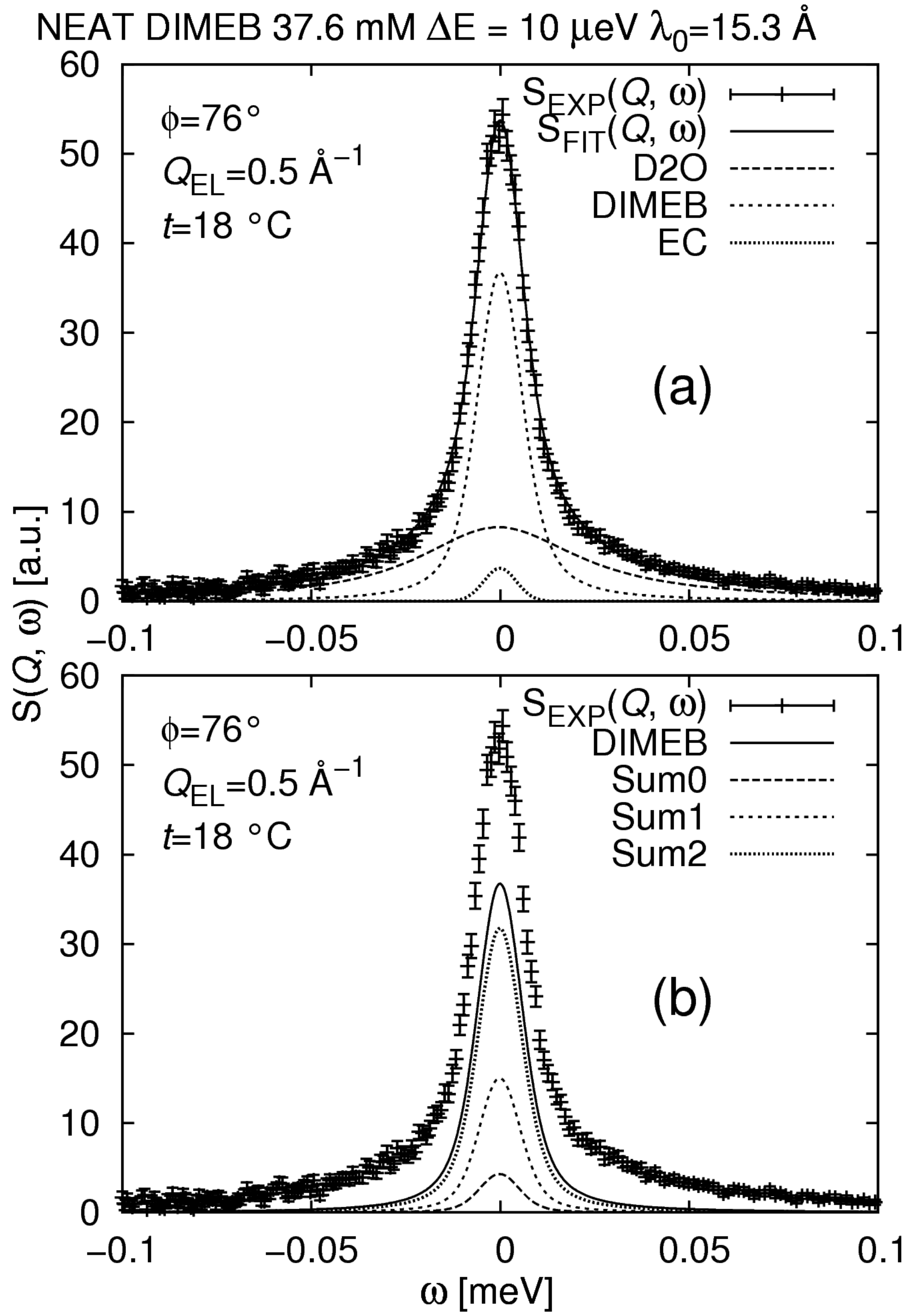

Figure B4 **Examples of the fits of the "standard solute model" to the {NEAT(3)} spectra of DIMEB solutions in heavy water, 37.6 mM, φ=76°.** $D_{TR\ SOL}$ was fixed to the values found for DIMEB 39.8 mM, see Tab. 7.4. In **(a)**: $S_{FIT}(Q, \omega)$ is the total fitted curve; "D2O", "DIMEB" and "EC" are the QENS components due to D_2O, DIMEB and the sample container scattering, respectively. In **(b)**: the decomposition of the DIMEB scattering component, "DIMEB", is shown. "Sum0" is the translational component (i.e. l=0), "Sum1" is the sum of the components with l=0 and 1, "Sum2" is the sum of the components with l=0, 1 and 2.

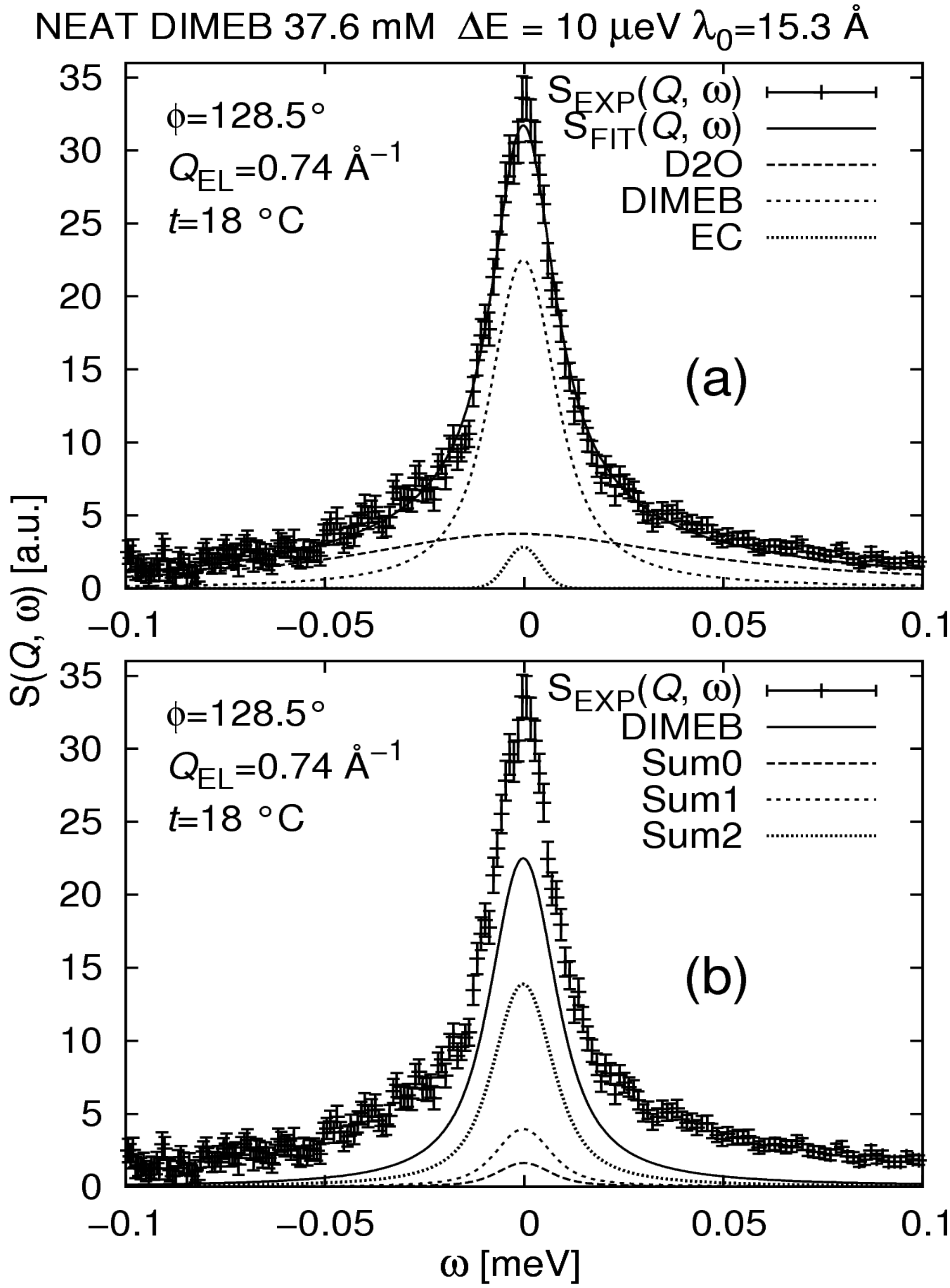

Figure B5 **Examples of the fits of the "standard solute model" to the {NEAT(3)} spectra of DIMEB solutions in heavy water, 37.6 mM, φ=128.5°.** $D_{TR\ SOL}$ was fixed to the values found for DIMEB 39.8 mM, see Tab. 7.4. In **(a)**: $S_{FIT}(Q, \omega)$ is the total fitted curve; "D2O", "DIMEB" and "EC" are the QENS components due to D_2O, DIMEB and the sample container scattering, respectively. In **(b)**, the decomposition of the DIMEB scattering component, "DIMEB", is shown. "Sum0" is the translational component (i.e. l=0), "Sum1" is the sum of the components with l=0 and 1, "Sum2" is the sum of the components with l=0, 1 and 2.